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THE AMERICAN FARMER

OLDEST AGRICULTURAL PAPER IN AMERICA: ESTABLISHED 1819 PUBLISHED ON THE 1ST AND 15TH OF EACH MONTH.

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Nov. 15, 1892.

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American Farmer
1729 New York Ave.
Washington D.C.

THE AMERICAN FARMER

SPECIAL JEWELRY PREMIUM LIST.

A New List of Holiday Goods of the Highest Quality and Latest Style.

THE AMERICAN FARMER has secured a line of premiums for the benefit of its patrons, many of whom are perhaps out of reach of markets where the best grades of goods are supplied at reasonable prices. Having access to trade prices and a full line of samples from the greatest Eastern factories, we have been able to make a selection of the choicest and most artistic examples offered this season.

We have not explained very fully all the points of excellence in workmanship and material when describing each article, on account of the space which would be required if a full description were given separately under each heading. There are some general points which can be better stated here, as they apply to all articles alike. With reference to the quality of this jewelry, it is all of heavy rolled gold plate, except where it is expressly stated that the metal, whether gold or silver, is solid. It is understood, of course, that an article made of rolled gold has a base of cheaper metal upon which is bonded, by means of heavy pressure under a high degree of temperature, a covering of gold of commercial fineness. This results in making an article having all the appearance of one which is gold clear through until the outside plate is worn out. In the case of our jewelry only plated goods of the highest class are used, as we patronize none except houses of established reputation.

With reference to the stones used in the rings, they are in every case exactly as represented, and only the experienced expert can detect the counterfeit or imitation stone from the genuine. It will be noticed, however, that in many instances genuine stones are used, and it is so stated. We guarantee the stones to be actually genuine in each instance where it is so announced. All of our goods are returnable if the purchaser is not satisfied, and the money will be refunded; provided, of course, the jewelry has not been worn or in any manner defaced.

The price of THE AMERICAN FARMER is $1 per year, and 10 all premiums offers a subscription to THE AMERICAN FARMER means an annual subscriber at the above rate. For example, if any article be offered as a premium for one subscriber and 15 cents added money, it means that $1 must be sent for THE AMERICAN FARMER for one year, with 15 cents additional for the premium. If an article be offered free as a premium for two subscribers, it means that $2 must be sent for two annual subscriptions to THE AMERICAN FARMER, in which case the premium will be sent free, postpaid, to the party sending in the subscriptions.

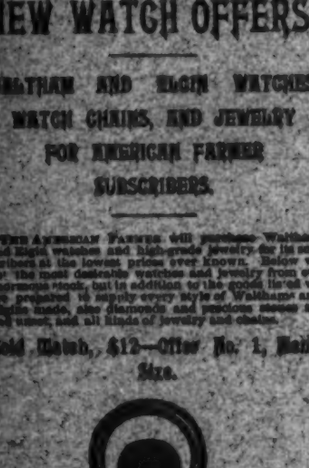
This rule applies to all clubs and premiums.

NEW WATCH OFFERS.

WALTHAM AND ELGIN WATCHES, WATCH CHAINS, AND JEWELRY FOR AMERICAN FARMER SUBSCRIBERS.

THE AMERICAN FARMER will purchase Waltham and Elgin watches and high-grade jewelry for its subscribers at the lowest prices ever known. Below we list the most desirable watches and jewelry from our enormous stock, but in addition to the goods listed we are prepared to supply every style of Waltham and Elgin watch, also diamonds and precious stones set and unset, and all kinds of jewelry and chains.

Gold Watch, $12—Offer No. 1, Men's Size.



No. 1 is a men's size Waltham or Elgin gold-filled, open-faced watch, stem wind and set, stylish jewels, and all improvements; an accurate timepiece that looks just like a $50 solid gold watch. The case is guaranteed to wear 15 years, just like solid gold. Watch clubs have been selling this watch for $25. Our price by registered mail, delivered, is only $12, or we will send it as a premium for a club of 10 yearly subscribers at $1 each and $7.50 added money.

Gold Watch, $14.35—Offer No. 2, Men's Size.

No. 2 is just like No. 1, but hunting-case. Price, delivered, $14.35, or sent as a premium for a club of 10 subscribers and $8 added money.

Solid Gold Watch, $25—Offer No. 3, Men's Size.

No. 3 is a genuine Waltham or Elgin watch, with 15 jewels, adjusted works, stem wind and set, compensation expansion balance, safety pinion, and all improvements. It is men's size, and comes in a solid gold "Brooklyn Grangers" double-stock case. Price, in either open face or hunting-case, delivery guaranteed, $25, or sent as a premium for a club of 15 subscribers and $17.50 added money.

Solid Silver Watches—Offer No. 4.

No. 4 comprises three distinct watches. They all have the same case, three ounce coin silver, open face or hunting-case. Anyone of the watches offered is a good and satisfactory timepiece, and we guarantee satisfaction every time, no matter what watch you select. Full-jeweled watches are generally better timekeepers than those with less jewels. You have your choice of Waltham or Elgin works in the case named above. The prices, including delivery, are as follows:

7-jeweled works	$10 00
15-jeweled works	12 00
Full 17-jeweled works	14 00

Or we will send the seven-jeweled watch for a club of 10 subscribers and $5 added money; the 15-jeweled watch for a club of 10 subscribers and $7 added money; the full-jeweled watch for 10 subscribers and $9 added money.

Full-Jeweled Watch, $10—Offer No. 5, Men's Size.

No. 5 is a genuine Waltham or Elgin full-jeweled watch, containing all the great features, such as compensation balance, safety pinion, lever winding and setting, adjusted, and fully guaranteed, and handsomely engraved in horse, pocket regulator, etc., fitted into a solid nickel silver, open-face case, with beveled plate glass crystal to heavy fit to withstand any strain. The works alone usually sell at from $15 to $18. We send it by registered mail to any subscriber, delivery guaranteed, for $10

Sent as a premium for 10 subscribers and $5.50 added money.

Ladies' Gold Watch, $13.15—Offer No. 6, Hunting-Case Only.

No. 6 is a genuine Waltham or Elgin watch, ladies' size, with seven jewels, compensation expansion balance, safety pinion, stem wind and set and all improvements. The case is beautifully engraved, and is guaranteed to wear 15 years, just like solid gold. This is a trifle thinner than No. 1, and it looks just like a fine solid gold watch. Sold to subscribers only; delivery guaranteed, and prepaid, for $13 15

Sent as a premium for 10 new subscribers and $6 added money.

Ladies' Solid Silver Watch, $9.60—Offer No. 7, Hunting-Case.

No. 7 is a solid coin silver watch, ladies' size. The case is coin silver, open face, stem wind and set, and all improvements. Sold to subscribers only; delivery guaranteed and prepaid, for $9 60

Sent as a premium for 10 new subscribers and $6 added money.

These watches are all warranted by us, and if not found to be satisfactory and as represented, the money will be refunded.

MEN'S WATCH CHAINS.

Our watch chains are the best in the world. They are made of solid rolled gold plate, and the links are soldered with solid gold, and in every way they surpass in good appearance as if they were solid gold. Prices below include free delivery:

No. 1210. Curb chain, 25-year filled gold	$2 25
No. 1211. Curb chain, 10-year filled gold	1 20
No. 1202. Curb chain, rolled gold	1 40
No. 1213. Trace chain, 25-year filled gold	2 25
No. 1215. Trace chain, 10-year filled gold	1 20
No. 1204. Trace chain, rolled gold	1 40
No. 1214. Aluminum chain, coin silver safety fob, handsome as silver, light as paper, strong as steel	1 00

LADIES' WATCH CHAINS.

These chains are made of rolled gold and are beautiful in design and perfect in finish. Prices include free delivery.

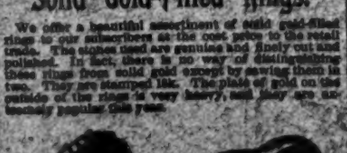
No. 1 has small links and a polished shield, made of gold open work. Price, delivered $1 75

No. 4 has small links and pointed bell pendant. Price, delivered 97

No. 5 is made of wave-in wire with fan pendant. Price, delivered $1 25

Solid Gold-Filled Rings.

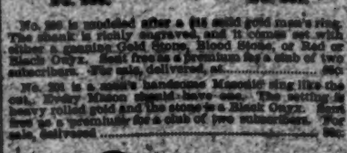
We offer a beautiful assortment of solid gold-filled rings to our subscribers at the cost price to the retail trade. The stones used are genuine and finely cut and polished. In fact, there is no way of distinguishing these Rings from solid gold except by weighing them in two. They are stamped like. The plate of gold on the outside of the rings is very heavy, and they are extremely popular this year.



No. 240. No. 241.

No. 240 is modeled after a $15 solid gold man's ring. The shank is richly engraved, and it comes set with either a genuine Gold Stone, Blood Stone, or Red or Black Onyx. Sent free as a premium for a club of two subscribers. For sale, delivered, at ..... 80c.

No. 239 is a ladies' handsome Masonic ring like the cut. Every Mason should have one. The setting is heavy rolled gold and the stone is a Black Onyx. Sent free as a premium for a club of two subscribers. For sale, delivered ..... 80c.



No. 242. No. 243.

No. 242 is a heavy gold-filled man's ring. It comes set with Gat-Gold Stone, Carbuncle, Blood Stone, Black Onyx, Gold Stone Carbuncle, Blood Stone Carbuncle, Red Onyx, Red Carbuncle and Flat Blood Stone. Your choice sent free as a premium for a club of two subscribers. For sale, delivered ..... 80c.

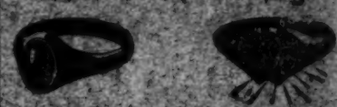
No. 234. No. 235.

No. 234 is a men's solid gold-filled ring set with a genuine diamond-cut diamond. It looks like a $25 ring and lasts. Sent free as a premium for two yearly subscribers. For sale, delivered ..... 80c.

No. 235 is a solid gold-filled men's ring with deep-cut imitation diamond. Many an expert would pronounce this diamond genuine until he subjected it to the test of the gem. Sent free as a premium for two yearly subscribers. For sale, delivered ..... 80c.

Purchasers should remember that these rings are made of high-grade stock, and that they far surpass ordinary plated rings in looks as well as in quality.

Ladies' Gold-Filled Rings.



No. 236. No. 237.

No. 236 is a ladies' solid gold-filled ring set with a Cartouche or Turquoise. Sent free as a premium for one yearly subscriber and 15 cents added. Price, delivered ..... 80c.

No. 237 is a ladies' solid gold-filled ring set with a sparkling diamond-cut brilliant. Sent free as a premium for one yearly subscriber and 15 cents added money. For sale, delivered ..... 80c.

No. 238 is a heavy solid gold-filled ring set with a beautiful dark green stone and four sparkling imitation diamonds. Sent free as a premium for three yearly subscribers. For sale, delivered ..... $1.

No. 238. No. 239.

No. 239 is a ladies' solid gold-filled ring set with a sparkling diamond-cut brilliant. Sent free as a premium for one yearly subscriber and 10 cents added money. For sale, delivered ..... 80c.

No. 240 is a heavy solid gold-filled ring set with brilliant red, white, and blue stones. This ring is a beauty. Sent free for two yearly subscribers. For sale, delivered ..... 80c.

No. 241 is a solid gold letter ring set with a genuine diamond. This is a gentleman's ring, and is especially appropriate for an engagement ring. Price, delivered ..... $2.50.

With THE AMERICAN FARMER one year $2.50.

HOW TO ORDER A RING.

Take an ordinary wooden match and cut off a piece just right length to pass crosswise through a ring of the size wanted. This will give the inside diameter. Inclose the piece of match in your letter, and from this measure we can fit your finger as well as though you had tried the ring on.

THE "SILVER CHICK."

PEPPER AND SALT.

No. 244.

Above is a reduced representation of the most pleasing table novelty going. They are made of American sterling, heavily plated with pure silver. The plate is quadruple, and will last a lifetime.

One is for pepper and the other is for salt. They are filled through the cap, which unscrews at the bottom, and the pepper and salt are shaken out through the top knot.

They are sent in a neat silk-lined box, postpaid, to any address with THE AMERICAN FARMER for $1 25

For sale single, postpaid 75

Or sent free for a Club of two subscribers at $1 each. Address

THE AMERICAN FARMER CO.,
Washington, D. C.

A FANCY CUFF BUTTON.

This button is heavy rolled gold, richly chased. In the center is a beautiful diamond-cut brilliant. It is one of the finest buttons of the season. We send a pair of these buttons for a club of only two subscribers, at $1 each. For sale 45 cents.

THE AMERICAN FARMER CO.,
Washington, D. C.

THE AMERICAN FARMER.

Established 1819. WASHINGTON, D. C., NOV. 15, 1892. Vol. LXXIII. New Series.—No. 22.

HON. MORTIMER WHITEHEAD.

Lecturer of National Grange and Chief in the Agricultural Department.

THE NATIONAL GRANGE of the Patrons of Husbandry is holding its 26th annual session this month in the city of Concord, N. H. One of its most important officers is the Lecturer, who has charge of the literary and educational work of the organization, which appears in our paper. The present Lecturer of the National Grange has held the position for a number of years. Mortimer Whitehead enjoys a National reputation as an early worker in the Grange, and one of the builders of the Order. We have taken pains to secure an excellent likeness, together with an interesting sketch of his life and work, for which latter we are mainly indebted to the *Pacific Rural Press*.

He was born Oct. 9, 1841, and belongs to one of the oldest families in the State of New Jersey. His ancestors, on both father's and mother's side, were among the patriots of the Revolution; even the women of the family partook of the "Spirit of '76." At the battle of Monmouth—fought on an extremely hot day in June—Aunt Peggy Whitehead was one of the women who carried water out to the soldiers on the field all day. And when the town (now city) of Elizabeth was threatened by the enemy, Aunt Rachel Whitehead helped roll the barrels of flour from the warehouses to get it to safer quarters.

The broad Anglo-Saxon name traces back across the water to one Master Whitehead, who was Chaplain to Queens Anne Boleyn and Elizabeth. His mother comes from the Huguenots, who, because of their persecutions, love of liberty, and desire to worship God after the dictates of their own consciences, were among the earliest settlers of this country. On his mother's side, as we have stated, the family were active in the battle of freedom. Gen. Heath (his mother's maiden name) was one of Washington's most trusted Generals, particularly in the campaigns through the "Jerseys," while Capt. Dunn—his mother's grandfather—was Captain of the Express Riders, and carried dispatches directly from Washington's hand to the Continental Congress.

HON. MORTIMER WHITEHEAD.

Brother Whitehead received a good education, mainly at Paulding and Oak Hill institutes, on the Hudson River. While not yet of age, from his father's farm he enlisted in the 26th N. J., and passed through some of the severest battles of the war with the Army of the Potomac, being of Gen. Sedgwick's famous Sixth Army Corps, and serving under Gens. McClellan, Burnside, Hooker, and Meade. At the close of the war he deliberately took up agriculture as his profession, purchasing a farm of 106 acres, which he has owned ever since, and is still cultivating at Middlebush, Somerset Co., N. J.

He has a herd of 14 head of thoroughbred Jersey cattle for the production of "gilt-edged butter;" raises corn, oats, wheat, and grass, but the main crop of the farm is fruit. Its orchards cover 45 acres, and contain over 3,000 pear trees, 1,200 apple trees, also peaches and other fruits. His pear orchard is said to be the largest and finest in New Jersey. The trees have been planted from 15 to 25 years, have been well cared for, and have this year yielded thousands of bushels of fruit that is selling at a price that well rewards the labor and care of years.

Progressive farming alone suited him when he started out, and he glories in the name of "book farmer," and was active in farmer's clubs and a Director in the County Agricultural Society at an early age. Like thousands of others, he was all ready for the Grange when it came, and went into it with his whole heart and strength. Himself and wife were charter members of the first Grange organized in New Jersey—Pioneer, No. 1—as far back as 1871, when there were hardly 100 altogether in the United States. Of this Grange he was first Lecturer. He soon after helped organize a Grange nearer home—Somerset, No. 7—and was elected its first Master; was made a General Deputy, and helped organize Granges in several Counties of the State. At the organization of the State Grange he was elected a member of the Executive Committee, and one year later Master of the State Grange, making his first appearance in the National Grange at Charleston, S. C., being the youngest Master of a State Grange.

At the Louisville session of the National Grange he was elected Assistant Steward, and served two years, followed by his election at the Cincinnati session to the office of Lecturer. At the 19th annual session of the National Grange, at Boston, November, 1885, he was again honored with the office of Lecturer, and has been re-elected continuously since that time. He was also elected and served as Lecturer of the New Jersey State Grange for three terms of two years each. Of his powers and success as a lecturer it is not necessary for us to speak; he is too well known, having lectured in nearly all the States of the Union, and has the honor up to this time of delivering more public and private lectures than any other member of the Order. So far this year he has been in 22 States lecturing for the Grange, and has traveled over 20,000 miles in that time. He is a natural orator, and his earnest and eloquent efforts, listened to by hundreds of thousands, have been of vast benefit in building up the Order, and his labors are duly appreciated.

Among the other duties required of the Lecturer of the National Grange is the preparation of articles in the form of circulars upon the various measures advocated by the Grange, the general work and progress of the organization; in fact, an educational bureau. These circulars are sent out regularly twice a month to the Grange, agricultural, and other papers circulating among farmers, and are reprinted in their columns. They also go to the officers of State Granges, to Deputies, and others as helps in their work of extending the organization. The National Lecturer has sent out as many as 642,000 of these official documents in a single year.

Three years ago Mr. Whitehead was called to a place in the 11th census, with special charge of much of its agricultural statistics. He prepared most of the schedules of inquiry and the questions asked of every farmer in the census year. The data was collected, and it now only requires the final work of compilation and publication. He also conducted several special investigations mainly in the line of horticulture, such as truck farming, seed farms, nurseries, grape growing, orange, lemon, and tropic and semi-tropic fruits. Special census investigations were also made of live stock on the ranges, horses and mules on farms, etc.

Early in the present year he was called by the Secretary of Agriculture to a place in that Department, and has been employed in aiding the extension of the benefits of the Weather Bureau among the farmers in accordance with the wishes of Secretary Rusk and Prof. Harrington, Chief of the Weather Bureau. He is

in constant demand for lectures before Granges, Boards of Agriculture, Farmers Institutes, etc., and since July 1 has been in 22 States and traveled many thousands of miles. He was Chairman of the committee—composed of John Trumble and F. M. McDowell—selected to design the certificate of the Seventh Degree of Ceres of the Patrons of Husbandry, National Grange, a description of which is published in this issue.

Brother Whitehead has four children—three boys and one girl—and that he may long be spared to our Order and his country, we know, is the sincere wish of his 10,000 friends. We can only wish the Grange and agriculture had 1,000 more like him. They are needed.

Grange Pointer

Dec. 4, 1892, the Grange celebrates its 26th birthday, and yet a few old fogies still live who say, "farmers won't pull together," "won't keep up an organization," etc.

Now that the Winter campaign of the Grange is opening up, see to it that a good program of live subjects for discussion is provided. Let these subjects cover a wide field. The farm, its crops, its stock, its fruits, and its flowers and ornamental trees and shrubs, and of course the house and home, for the wife and daughters in your Grange must be interested also. The real great end of all farm work should be to make a perfect farm home.

What legislation, State and National, is needed this Winter to benefit those of us who are farmers in this neighborhood is a good practical question to think over and then talk over at your next meeting.

The social side of your Grange should be cultivated. It is inside where the warm fires glow and the bright lamps shine and the good cheer prevails to make us ready to face the weather again in pursuit of our avocation.

The most successful Granges are those that meet often. Don't let the interest grow cold by long intervals between meetings.

Golden Sheaf Grange, No. 587, New York, recently purchased over two tons of barbed wire in one order.

The Grange is a power behind the throne, and through it the city and country are being introduced to each other.

New ideas are the steps by which progress is made. Progressive farmers are after new ideas. There is no better place to get new ideas than in your farmers organization. Farmers should put their heads and ideas together.

The farmers in the Granges of Maine have taken active steps to have the first principle of agriculture taught in the country schools.

Official figures show that the membership of the Grange in New York State has increased within a year 4,144.

A good lesson that farmers are learning in the Grange is to reason from cause to effect.

Combination is the rule of the day. A good combination for every farm is brain and muscle, and the Grange is showing how to use both to the best advantage.

"Woman's work in the Grange." That sounds good, and it is good. It is woman's work in the home, on the farm, in the church, everywhere, that keeps things moving and moving in the right direction—

"For the hand that rocks the cradle
Is the hand that rocks the world."

Moral: Be sure to get the wives, mothers, and daughters of the farm interested in your Grange.

The New England States are organizing the most new subordinate Granges this year. Intelligent, enterprising farmers know a good thing when they see it, and, like the Yankee farmer boy the poet tells about, "If there's go in it, he'll make it go."

A good, zealous member of the Grange in Illinois writes: "If the Grange should go out of existence to-day, and its records, its charts, its published works, its halls, and its stores were reduced to ashes, it has scattered seeds broadcast through the land that would germinate and come forth from the ashes like Phœnix of old."

Farmers in the Grange have been learning the lesson that they have brain as well as muscle, mind as well as land, and that it pays to cultivate the one as well as the other, for "knowledge is power." Brain always has ruled muscle, and always will. As is the soul above the body, so is brain above muscle. The farmer and his interests will be advanced and respected just in proportion as he improves his education in all things that pertain to him in his several relations as a farmer, as a man, and as a citizen.—MORTIMER WHITEHEAD.

AN EMBLEM OF THE GRANGE.

Description of Certificate of Seventh Degree of the Order of the Patrons of Husbandry.

The Ancients worshipped Ceres as the Goddess of Agriculture, but we, in a more enlightened age, give her the honored position methaphorically and to show our respect for women.—*Grange Manual.*

The sentiment of the above quotation—and the lesson of the Seventh Degree itself—is the idea brought out in the certificate. The old gives place to the new. Superstition has passed and intelligence rules. The central figure is the Ceres of to-day, the mother surrounded by her family upon a modern, progressive, intelligent farm, such as the Grange holds up as its high ideal.

Woven into the tapestry of the curtain which the bright boy and girl are drawing aside are the faint images of the ancient temples erected to Ceres. The fire burning on the altar reminds us of the rites of the Eleusianian mysteries, the tests of water and fire. On the curtain at top center an altar stands with fire extinguished and inverted torches showing that the olden mysteries are gone forever, and that the shrine of the Ceres of mythology is empty.

As the curtain is drawn aside it reveals an American farm of to-day in the Summer season, the harvest time when Ceres rules. The sky is clear, the modern self-binder makes the toil of the harvest light. The city, with its factories, the railroad, telegraph, and telephone showing the great march of invention; the church, Grange Hall, and schoolhouse—the great trinity for the upbuilding and protection of the American farmer's home, and through that home the homes of all our land—all are seen. The house, orchard, cattle, poultry, even the family dog and cat, are but the pleasant surrounding to the family group, father, mother, and children, the brightest and best products of American farms, for even "We are God's Husbandry." The fruits, grain, cotton, palms, etc., at the sides show the gifts of Pomona and Flora to the general good, and typify the products of all sections of our country that the Grange has grandly and forever united in "the strong and faithful ties of agriculture."

The sheaf of wheat bearing the Seal of the Seventh Degree, is one of the most generally used emblems of our order. It is found upon the seals of thousands of Granges, and forms the central figure of the official badge pin adopted by the National Grange. Brother A. B. Grosh, one of the honored seven "Founders" of our Order, originally gave it its emblematic meanings. He said: "The sheaf of wheat—many grains to each ear, and all the ears united in one sheaf by a common band—not only represents the resulting product of the soil and our labors in this chief of grain, but also presents an emblem of the Order; the many united to form a Grange, and the many thus united again to form the Order, and all bound together in one band of fraternal unity."

The bright sickle as the emblem of Ceres and of the harvest has appropriate place, and other items of detail explain themselves.

The call for a certificate of membership in the Seventh Degree also implied the necessity of a Seal, and one has been provided.

It is seven sided, typifying the number of the Degree, and also the seven "Founders," who gave to the world an organization that has already conferred its benefits upon millions, and their names should be, as they are, printed in letters of gold. The wreath of myrtle and the monogram K. O. will be familiar to all who have shared in the honors of the Degree. The several colors are those of the different Degrees in our Order, and all culminating in the Seventh. The blue being that of Subordinate, or Fourth Degree; the green, Pomona, or Fifth Degree; the pink, Flora Sixth Degree; the corn color, Ceres, Seventh Degree.

The ribbon to which the Seal is attached is the band that holds the sheaf together. What God, and these men, and this Order have bound together, let no man attempt to put asunder—*Esto perpetua.*

Maine's Lumber Output.

By the end of this month the steam and water mills from which comes the greater part of the long lumber manufactured in Maine will have been closed for the Winter, and therefore an accurate estimate can be made of the output. The operations along the Penobscot River are the heaviest in the State, and here 198,000,000 feet of long lumber have been manufactured. This is about two-thirds the output of Maine. From the Penobscot River there have been sent 75,000,000 cedar shingles, about 75,000 cedar posts used in foundations, fencing, etc., and 40,000 knees for buildings and piers and for the construction of vessels. About 600 carloads of hemlock bark have crossed the State, though one-half of this was imported from New Brunswick.

The heaviest production of a water mill, 20,000,000 feet, was from that owned by James Walker & Co., which is the largest water mill under one roof in the world. The greatest production from a steam mill was that from the concern of F. W. Ayer, 28,000,000 feet.

Maine has lost the hemlock trade of New England to Pennsylvania, due, so men here say, to lower rates given by the railroads. The Boston & Maine system could not do more than take care of the higher class of freights offered, and would not make a competing rate and struggle for the lower class. This has operated in an unexpected way. Some of the tannery firms had purchased stumpage on extensive hemlock tracts in order to get the bark, but the price paid was based on the selling of the hemlock wood at from $7 to $10 per 1,000. The knocking out of the hemlock merchandise and its consequent decay where it was felled in the woods caused some of the tannery men to suspend payment.

Aside from this, the season has been a fairly good one. There are now in Maine for Spring use in the mills about 62,000,000 feet of logs, a small stock; therefore, merchants in the Sound ports, New York, and Massachusetts, who buy lumber in Maine will find prices firm. The demand for spool wood for foreign shipment has been good, and several vessels and one steamer have been loaded for Glasgow and Greenock. There are but four or five cargoes of ice on the river, and this will be shipped to New York and Washington within two weeks. Preparations looking to the putting up of about 1,500,000 tons this Winter on the Kennebec and Penobscot Rivers are being made.

The disaster at Orono, where a digester in a pulp mill burst, has led to a rigid inspection, and already about $50,000 worth of digesters have been condemned. It is thought that $500,000 worth of digesters will be cast aside in this State within six months to be replaced by safer though much less effective apparatus. The failure of bronze metal to withstand the acids used in cooking-wood pulp has been a serious blow to pulp men all over the country.

BEET SUGAR.

The Interesting Process of Converting the Beets into Sugar.

BY WALTER MAXWELL, U. S. DEPARTMENT OF AGRICULTURE.

IN A SERIES of articles contributed to THE AMERICAN FARMER we endeavored to treat of the subject of sugar-beet culture, and to present the most approved modes of cultivation, with the latest experiences and data relating thereto.

At the close of the current season, and when the factories are rapidly approaching the end of the work of converting the product of the field from its crude state into the form suitable to the market and the table, it may be of interest to have a general idea and understanding of the great process of manufacture by which the sugar contained in the beet is extracted and treated, until it is obtained in the shape of the beautiful crystallized body in which it is offered for domestic use. And in the effort to convey what can only be a summary view of the process, we shall attach our observations to a notable example of manufacture obtaining in the State of Nebraska, and in doing so we shall give some description of the work, and likewise an idea of the steps which are being made to establish the industry of beet sugar production in the United States.

The factory of the Oxnard Beet Sugar Company is located at Grand Island, Neb. The work of producing beets is controlled by the company, and they either grow the crop themselves or contracts are made with farmers to produce a given number of acres, the company providing the seed and the expert direction necessary to the proper cultivation. When the time for harvesting the roots approaches each grower, including the company, sends in weekly to the factory a sample from each tract or field to be analyzed. The analyses of each week not only indicate the general state of the crop, but they determine the order in which the fields are to be harvested according to their degree of maturity.

FIG. 1.—THE OXNARD COMPANY'S SUGAR-BEET FACTORY, GRAND ISLAND, NEB.

The operation of harvesting and moving the crop to the factory is a heavy undertaking. Small patches grown by farmers in the neighborhood of the factory are delivered directly in wagons. The main body of the crop, however, is grown at a distance of some miles, and has to be transported by the railroads. In the fields of the Oxnard Company, lying some 12 miles from Grand Island, from 100 to 200 laborers may be seen preparing the beets for transport; and approaching, 50 teams are employed hauling the roots from the field to the "dump" arranged by the side of the track of the Union Pacific Railroad, the latter service transporting them to the factory. A train of 20 cars, each containing 20 tons, is frequently moved from the field to the factory, whose daily capacity and requirement are 300 tons when in full work.

When the beets arrive at the factory the cars are run alongside of the great storage sheds, one of which is shown in the illustation (No. 2). The two sheds have a storage capacity of 4,000 tons, or what is required to keep the factory in full operation for 14 days. Railroad tracks are laid along each side of the sheds in order that a large number of cars can be unloaded simultaneously, and with a minimum of labor. The floors of the sheds have a slope from each side gradually to a depth of four feet toward the middle, by which mode of construction a kind of canal is formed, having also a very gradual fall toward the end of the building from whence the beets are drawn to the factory.

The mode of moving the beets from the storage sheds to the factory is ingenious and extremely economical. From the delivery end of each shed a bricked and cemented canal is run, the two canals conveying and emptying in the wash-chamber of the factory. From the large water-supply tanks elevated pipes, which are shown in the view No. 1, of a considerable size convey a constant stream of water, which is turned into one or both of the canals as it may be required. All that is further necessary is the feeding of the beets into the mouth of the canals, and they are borne along by the stream to the washing-room.

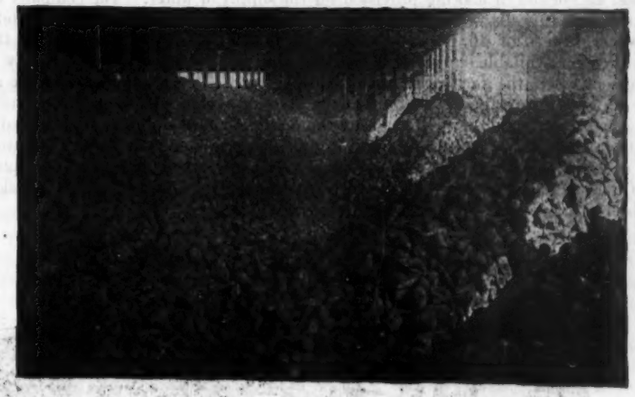


FIG. 2.—STORAGE SHED OF THE OXNARD BEET COMPANY.

As the beets have to be thoroughly cleaned before they go on to the next stage of treatment, the method of carrying by a stream of water from the sheds to the washing-room has a particular advantage. In fact, a large portion of the adhering soil is removed before the roots get into the "tub." In the wash-chamber of the Oxnard Company's factory the beets are delivered by the canals into what is called the "beet wheel." The wheel has a circumference of about 35 feet. From each side of it what may be called flanges extend toward the axis, and these are intersected at intervals, thus forming boxes about 18 inches square, which in every respect correspond to the pockets upon an elevator. The beets are dropped from the canals into the boxes of the wheel, and, as the latter revolves, the beets fall upon a shute, down which they slide to the washtub.

The "washtub" is about 20 feet long, four feet wide, and nearly the same in depth. Along the whole length of the tub a revolving axle is laid, which is furnished with arms that are placed at close distances from each other, and which are constructed in the whole like the bore of a corkscrew. When the axle is in motion, and revolving as it does, chiefly under the water, the beets are not only kept in constant motion, but are gradually forced along from the end of the tub where they are received from the shute to the end where they are delivered.

The removal of all adhering soil is accomplished in the manner explained, and the beets are conveyed by an elevator to an upper floor, where a system of revolving brushes is arranged. The beets are delivered by the elevator upon the brushes or "scrubbers," if it is necessary; but at the Oxnard Company's factory the beets are in such an excellent condition on leaving the "tub" that the scrubbing process is dispensed with, and the roots are carried by a further elevator up to the third floor, where, in the first place, the precise weight of the raw material entering the factory is determined. The box of the weighing machine rests immediately above, or by the side of, the so-called "slicer," and the beets are emptied directly into it.

FIG. 4.—INTERIOR VIEW OXNARD COMPANY'S SUGAR-BEET FACTORY.

The slicer is a machine for the purpose of cutting up the beets into extremely fine shreds or particles, and the particles which have passed the operation are about the thickness of macaroni or goose quills, and some two to three inches in length. Now, the beets having been washed, weighed, and reduced to the state of particles, the latter being most usually called cossettes, the actual process of extracting the sugar begins.

Before proceeding with the further stages in the process of manufacture, it will be of interest to give some idea of the water supply necessary to all the requirements of the factory. The Oxnard Company was guided by certain geological authorities in making provision for the supply of water. The company was assured that 40 wells would furnish two and a half million gallons of water daily. However, instead of 40, 80 wells were sunk in the vicinity of the factory, thus affording an available supply of 5,000,000 gallons, which is double the daily requirement when the factory is in full work. The daily consumption is made not only by the conveying and washing of the beets of which we have spoken, and in the act of extraction, but likewise by the boilers in furnishing the steam used in the factory. Twelve large boilers are in use when the factory is in full operation, and each boiler requires five tons of coal per 24 hours, which makes a consumption of 60 tons of coal per day. These are large numbers, and indicate the dimensions of the plant and of the process of manufacture.

one and a half tons of cossettes; so that no less than 21 tons of beets are required for one charge of the battery.

In referring again to the illustration No. 3, the end of a shute is observed delivering cossettes into a cell. The shute is conducting the raw material down from the slicer. When the first cell is filled the shute is moved round to the second, and thus until the whole battery is charged. When a cell is filled it is closed up, and water, which has been heated by steam to a given temperature, is forced into it. It should also be explained that the cells of the battery are in connection with each other, so that the juices can pass from one to the other. Now, when the water forced into the first cell has taken up the greater part of the sugar, it is passed on to the second cell containing fresh cossettes, and in that way until the extracting liquid is well charged with sugar. Fresh quantities of water are forced into the cells until the extraction is complete. When the cells of the battery are all in operation one is in the act of being charged and one being emptied, whilst the remainder are what is termed "under pressure."

The cells are discharged from the bottom. When the cossettes have been fully diffused, and the sugar is in perfect extraction, the cell is opened at its base by means of a screw, and the whole contents are dropped into a chamber below, It can be conceived with what a rush the two tons of material contained in a diffuser drops into the space underneath. The floor of the chamber gradually slopes to

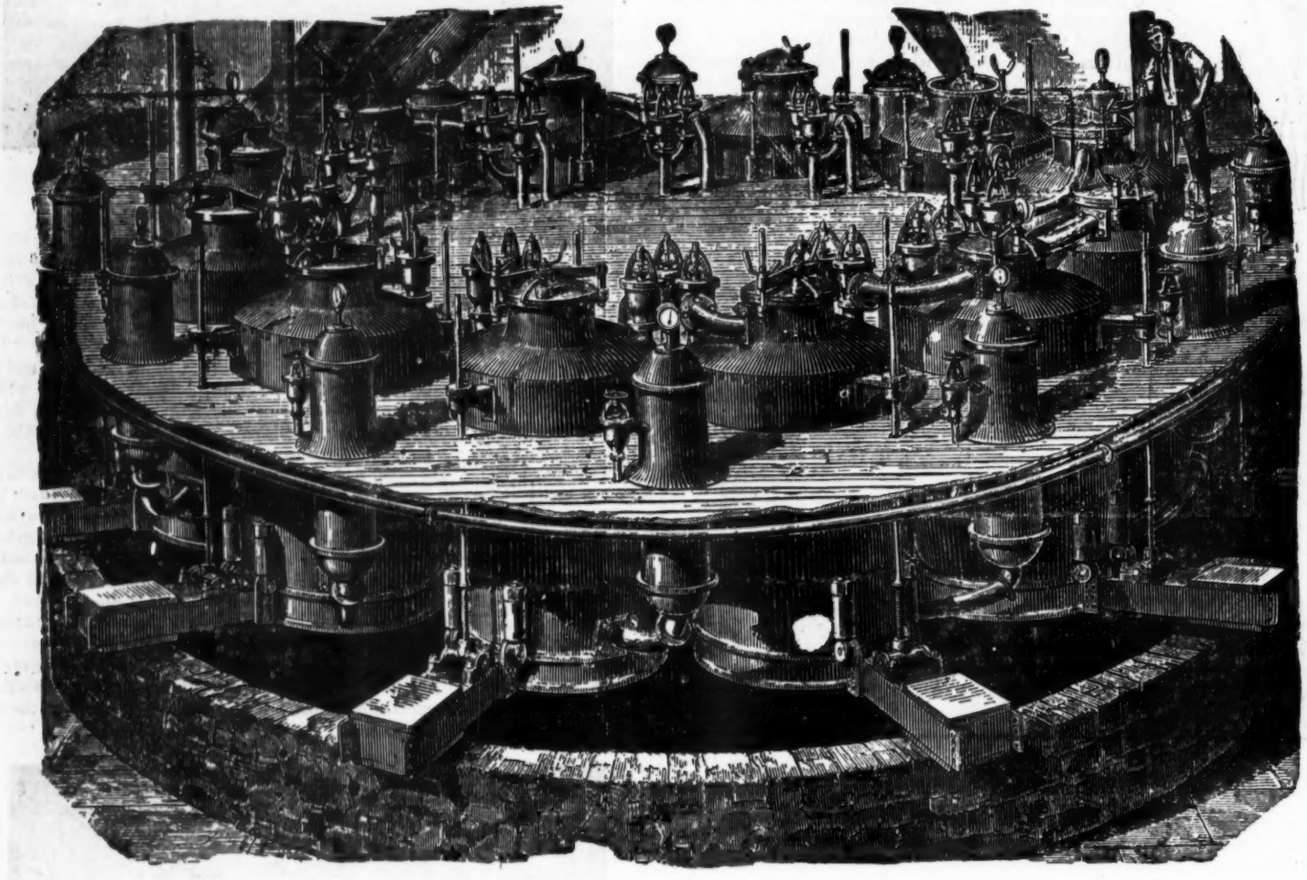


FIG. 3.—A DIFFUSION BATTERY.

Returning to the subject of following the beets through the several stages of the process, we have to consider their delivery in the form of the cossettes from the "slicer" into the cells of the so-called diffusion battery (see illustration of the battery in view No. 3).

The method of recovering the sugar from the beets by diffusion or extraction is comparatively a recent invention. It has, however, almost wholly replaced the old process of obtaining the juice by mechanical expression, which latter is the method still largely in operation in the factories in the treatment of the sugar-cane. Particularly in its application to the working of beets, the diffusion process is so immeasurably more excellent that it may be considered as the only one in use.

The principle of the diffusion process lies in the act of saturating the beet cossettes with heated water and dissolving out, or extracting, the sugar, instead of obtaining it by expression of the juice. The "diffusion battery" is the means by which the extraction is made. There are batteries of several modes of construction, but the most generally approved is such an one as is shown in view No. 3, which is called a circular battery on account of the relative arrangement of the cells.

A circular battery is usually made up of 12 cells. In the Oxnard Company's factory the battery is formed of 14 cells, each one having a capacity for receiving its center. It is likewise constructed in order to act as a filter, letting through the diffusion juice, or the liquid extraction, whilst the cossettes, which may now be remembered as "pulp," remain on the floor. The diffusion juice is pumped up into what are called the "measuring tanks," and the "pulp" is carried up by an elevator to a system of hydraulic presses where the juice still held by the pulp is perfectly expressed. After the complete expression of the remaining juice and sugar, the pulp is carried by a further elevator outside of the factory and dumped as a side or waste product (see illustration No. 1). The value of the side products will be considered on a later occasion, and particularly as they, the original raw material, have no further part in the process of manufacture.

The sugar is now gotten out of the beets, and is fairly upon the course of treatment by which it is eventually brought into the crystallized state in which it appears upon our tables.

It was said that the "diffusion juice" on leaving the battery is drawn into the "measuring tanks." By means of the measurements taken in those tanks the actual volume of juice, with the exact content of sugar, is determined; and such determination is made the basis of calculation and control of the juice as it passes from stage to stage right through the factory.

After leaving the measuring tanks the juice cannot be directly evaporated down to a sirup consistence; it has to undergo a process of liming for the purpose of

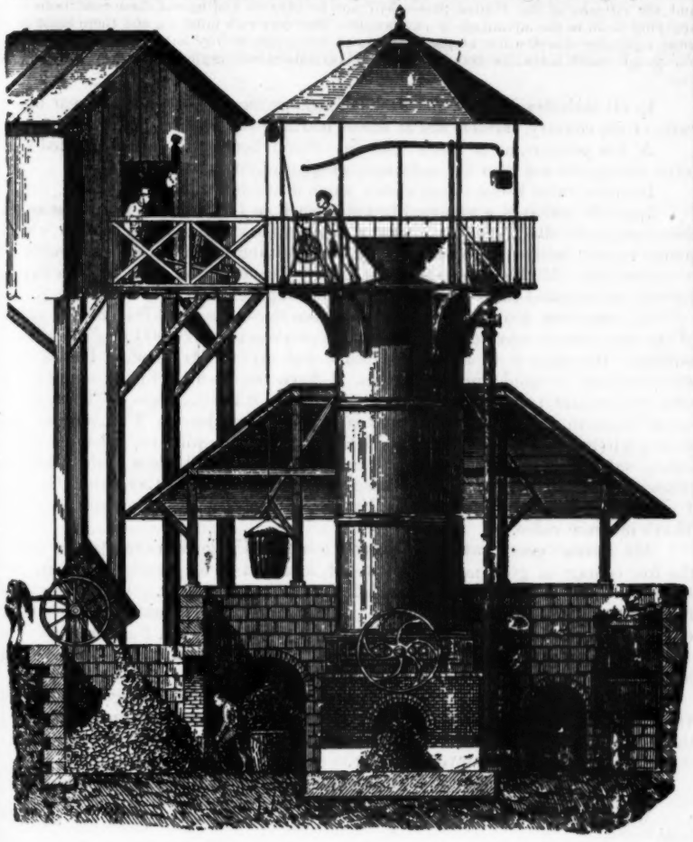


FIG. 5.—FURNACE FOR THE PREPARATION OF LIME AND CARBONIC ACID FROM LIMESONE.

clarification. The juice is drawn from the tanks into the "clarifiers," where it is treated with a great excess of lime at a given temperature. After the treatment with lime, carbonic acid is pumped into and forced through the limed juice, by which means the excess of lime is thrown down in a chemical combination with the carbonic acid, and thus largely separated from the juice. The juice is next passed through specially constructed high-pressure filter presses in order that the suspended mixture of lime and impurities may be separated. The process of "liming" is gone through a second time, but a very much less amount of lime is added, and with the juice at boiling point. Carbonic acid is likewise forced through the limed juice again, and until the whole of the lime is precipitated as carbonate of lime. The former treatment of the limed juice with carbonic acid is called the "first carbonation," and the latter treatment the "second carbonation," or the "saturation." After the second carbonation the juice is again passed through the filter presses before passing on to further treatment.

The bodies of which we have spoken—"lime" and "carbonic acid"—perform an indispensable work in the manufacture of sugar from the beet. Some idea of the uses of those bodies may be drawn, not only from the functions already assigned to them in speaking of the purifying of the juices, but also by stating the amount of limestone consumed in their preparation.

The Oxnard Company's factory in providing the lime and carbonic acid required when the plant is in full operation burns, in three furnaces, no less than 20 tons of limestone daily. That is a large undertaking in itself.

Limestone furnishes the two bodies required. When the ordinary limestone is burnt it breaks up into common lime and carbonic acid. The lime is taken from the furnace at the completion of the burning. The carbonic acid, which is a gas, is drawn from the furnace as it is generated or set free by heat from the limestone and collected in closed tanks. From the tanks it is pumped up into the carbonation tanks as it is required.

We have said that lime and carbonic acid exist together in chemical combination in limestone, and that by the burning of the latter those bodies are forced each into a separate existence. When the carbonic acid is drawn into the tanks where an excess of lime is present, but where the temperature is very much lower, in fact, cold, in comparison with the heated furnace, those bodies enter into a chemical combination again, forming carbonate of lime, which is the chief substance of limestone. We have here a simple but an extremely interesting illustration of the application of chemical processes in industrial operations.

The diffusion juice, after the second carbonation and filtration, is conducted to the evaporators, where it is boiled down and condensed to the consistence required for the crystallization of the sugar.

The old method of evaporation consisted of boiling the expressed juices in long, open pans, which were set in brick work over a draft fire. The old method served its day, and is still serving where the improved modes of treating the juice do not fully obtain. The open evaporator, however, has become practically replaced by the so-called vacuum pan.

In order to clearly understand the principle of the vacuum evaporator we must make it clear to ourselves what is really meant by the word "boiling." In brief, we may say that a liquid boils when its tention is increased to that point by the application of heat, whereby it overcomes the pressure of the atmosphere. As soon as that point is reached ebullition takes place, and it begins to boil. Now, not only do different liquids boil at different temperatures, but the same liquid has a different boiling point under varying degrees of atmospheric pressure. Ordinarily we say that water boils at 212 degrees Fahrenheit, or, according to the French thermometer, at 100 degrees. That, however, is only true under the greatest atmospheric pressure, which is found to obtain at the so-called sea level. If we go upon a hill, considerably above the level of the sea, we find that water boils at a temperature much below the French boiling point of 100 degrees. And upon the great mountains, which rise to an altitude of many thousand feet above the sea's level, why the difference is astounding! On Mount Blanc, lying between France and Switzerland, which is some 16,000 feet, or more than three miles above the level of the sea, water commences boiling at such a low temperature that even an egg cannot be cooked in it. That is owing to the fact that at the hight of Mount Blanc the weight or pressure of the air is so much less than at the sea's level, and that a smaller amount of heat causes the motion of water to overcome that pressure.

The principle of the "vacuum pan" lies in the application of the law relating to the boiling point of liquids which we have noticed in operation in the open air. In the illustration (No. 6) we have a vacuum evaporator. It is an immense closed boiler. When the diffusion juice is brought into it steam heat is applied through a system of heaters arranged in the bottom portion of the inside of the pan. At the top of the pan is attached the arrangement by which the vacuum is created, which we may consider as an air pump, which is constantly withdrawing the air, and thus the atmospheric pressure, from off the surface of the liquid in the pan. The application of heat causes evaporation to begin, and with the increase of heat the liquid passes rapidly into steam, which is carried off as quickly as it is generated by the vacuum pump.

The signal value of the vacuum pan consists not only in the rapidity with which large volumes of juice are boiled down to the required consistence, but in the boiling and evaporating at low temperatures, by which the danger of damage to the sirup by burning is avoided.

When juice is brought into the pan and evaporated down, fresh quantities are drawn in, and the evaporation continues until the capacity of the pan is reached, which is equivalent to very many thousand pourds of sugar. The emptying of

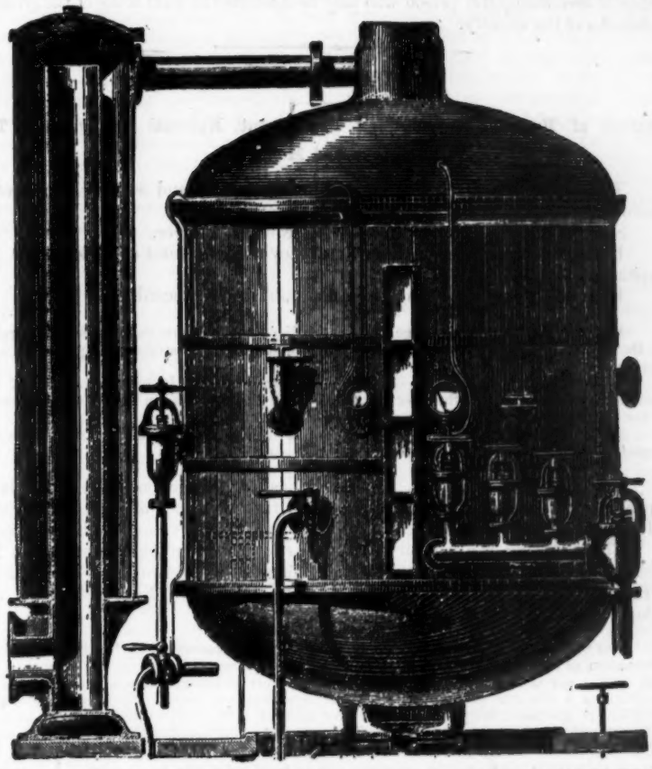


FIG. 6.—A VACUUM PAN FOR THE CONDENSING OF THE JUICE AND BOILING TO SUGAR.

the pan is called a "vacuum strike" or "strike." The thick mass of crystallized sugar and molasses, called "massecuite," is taken from the pan into "coolers,"

which are metal boxes of about two bushels capacity. The massecuite passes into the "cooling room," remaining in the coolers until removed for the purpose of separating the crystallized sugar from the molasses.

The appliances by which the sugar is separated from the molasses are called "centrifugals," because of the principle of their construction, and the operation is termed "swinging out" the sugar. The molasses from which the sugar has been taken out is further treated in order to recover from it a second crop of sugar.

It is extremely interesting to see the centrifugals at work, and particularly when high grade massecuite is being handled. The sugar is swung out almost white, although in a moist condition.

When white, granulated sugar is being made. The sugar passes from the centrifugals by means of an elevator to the "granulator." The latter is a huge cylinder, which is in constant revolution when operating. From the elevator connecting with the centrifugals the sugar is delivered into one end of the granulator. As the sugar drops upon the down side of the revolving granulator it is held by small shelves until, by the act of revolving, those shelves reach the upper side, when the sugar slips off and falls upon a drum that is fixed to the central axle of the cylinder. The drum is heated from the inside, and as the sugar is dropped upon it the sugar becomes gradually dried. As the granulator keeps revolving the sugar is picked up and dropped upon the drum until it finally reaches the opposite end of the granulator, where it passes through a screen and is ready for weighing up into bags for the market.

The sugar is put up in bags containing exactly 100 pounds. Under the existing system, whereby a bounty of two cents per pound is paid by the National Government upon crystallized sugars manufactured in the United States, a record is made by the officers of the Inland Revenue Department of the quantity and quality of all sugar made before it leaves the factories. When each bag has received the Government stamp it is ready for sale.

So far in our observations we have not spoken of the "chemical control," which is a highly important work in the factory. Every well-organized factory has its laboratory, where the chemical observations relating to the process of manufacture are made and recorded. The chemical work is usually divided into two parts, viz., the sampling and analyzing of the beets as they enter the factory, and the analysis and control of the juice obtained from the beets in each stage of its progress from the diffusion battery to the sugar going into the bags. Each step of the process is marked by conditions which require a scientific control, at least in the best organized manufacturing establishments.

A large sugar factory in full operation is one of the most interesting industrial undertakings that can be seen. The plant is essentially upon a large, a complicated, and an imposing scale of construction. And the sight of hundreds of tons of the raw material being drawn from the field entering the factory, and in less than two days the saccharine matter of the beet being obtained in the beautiful crystallized form, ready for the table, we think it is one that should not escape the notice of any thoughtful person who may be interested in what is one of the greatest industries of the country.

THE LECTURER.

Patrons of Husbandry, Lecturer's Department, National Grange, on "The Grange and Money."

The National Grange has for years recommended and set the example of a thorough discussion of the important question of finance.

Since 1877 it has declared for the free coinage of silver.

It has advocated an increase of currency to the amount of at least $50 per capita.

Here is the official language from the published "proceedings."

Whereas the National Grange does not believe that we now have sufficient currency in the Nation for the legitimate purposes of trade and to meet necessary obligations; therefore be it

Resolved, That this National Grange declares and expresses its opinion in favor of free and unlimited coinage of both silver and gold, just as it existed from almost the foundation of the Government up to 1873, when silver was demonetized.

2. That we believe that the Government alone should issue money, and that we do demand that a sufficiency of legal tender notes be issued.

And it has insisted that no "exceptions" or restrictions should be placed upon one kind of money more than another; that all money of the country, gold, silver, or paper, should be of equal and full legal tender value for all purposes.

The following is a portion of the report of the Standing Committee on National Legislation of their work before Congress as presented to the National Grange at its 25th annual session, held at Springfield, O., November, 1891, and adopted by that body:

Our Order represents the wishes not only of its own membership, but those of a large proportion of the people of our country in asking an increase in the volume of currency to $40 or $50 per capita. The proposition to issue this additional currency upon real estate security, at a low rate of interest, has been quite generally brought to the attention of the people. It has been favorably received and advocated by many of the best and most intelligent citizens of our country, who believe it would greatly relieve the depressed condition of agriculture, and enable farmers to save their homes from the hammer of the Sheriff. It is not, as claimed by some, a wild, visionary and impracticable scheme; neither is it class legislation. There is no law which prohibits any men, or class, from buying real estate, and thus be prepared to furnish the required security. Whether it would be well for Government to enter upon this policy or not should be thoroughly discussed, which would so develop the plan as to make it entirely practical, or evolve a financial policy that would give needed and permanent relief. Of one thing we may be assured, out of a fraternal discussion of the question will come light and good results. There must be better conditions possible than those which exist at present under the financial policy which now rules all the great Nations, and the citizens of the United States will not be slow in finding out these conditions and applying them to the advantage of our people. The very rich must go, and there must be a more equitable distribution of the comforts of life to the worthy but extremely poor. All our people must learn the commandment: "Do unto others as you would have them do to you."

In all their hundreds of thousands of Grange meetings held every year in all parts of the country, farmers are at school learning the truth about finance.

A few pointers, as a lesson leaf, are offered here on the often disputed and often misrepresented item in the finance question of intrinsic value.

Intrinsic value is one thing, money value is another thing.

Intrinsic value is a commodity value, such as the value of wheat, potatoes, diamonds, gold, silver, iron, etc.; money value is the value given by the law which makes money, being stamped upon a substance having much, little, or no value as a commodity. Money represents the value of commodities, without necessarily having the intrinsic value of the commodity it represents.

A farmer can prove the difference between the intrinsic and the money value of the same article very easily. Suppose he gets together $20,000 in gold metal—bullion. He takes it to his nearest bank and says: "Mr. Banker, I have here $20,000 worth of gold (intrinsic value). I have no use for it for six months. I wish you would take it and pay me interest for it for that time." The banker would laugh in that farmer's face, and say: "Why, my dear sir, I have no use for your gold (intrinsic value), but I will tell you what I will do; I have a good, strong safe, some good safe deposit vaults, in which I will place your gold (intrinsic value), the same as I would keep your diamonds and other valuables, and I will keep it safe for you, if you, Mr. Farmer, will pay me for keeping it for you." That's intrinsic value.

Mr. Farmer goes away, takes his gold to one of Uncle Sam's mints, and under the free coinage of gold, as we now have it, and had it for nearly 100 years for silver also, and has it coined into gold dollars and gold eagles. The farmer goes back to that same bank with his same gold as money, and again asks the banker to take it for six months. The banker says: "Oh! yes, Mr. Farmer, I will be very glad to have it (money value), and I will pay you interest on it as long as you leave it with me."

Now that farmer has learned that money value is one thing and intrinsic value is another thing, and he learns that money value is more than intrinsic value; that the banker will pay for the use of one and not for the other.

Money has really no intrinsic value.

Attorney-General Ackerman, in speaking of the legal tender act, said:

We repeat, money is not a substance, but an impression of legal authority—a printed legal decree.

The theory of the intrinsic value of money has been abandoned by the best writers and speakers.—*Encyclopedia Britannica.*

Metallic money, while acting as coin, is identical with paper money, in respect to being destitute of intrinsic value.—*North American Review*

An article is determined to be money by reason of the performance by it of certain functions, without regard to its form or substance.—*Appleton's American Encyclopedia.*

Metallic money, whilst acting as money, is identical with paper money, in respect to being destitute of value. Coin, so long as it circulates for the purpose of buying and selling, loses its intrinsic value. As commodities, gold and silver are capital; but as money, they are mere representatives of value.—*Charles Moran, of France.*

The Grange takes no backward steps.—MORTIMER WHITEHEAD.

Coffee in Guatemala.

On the Chocola plantation, in the Costa Grande district, Senor G., who is an inventor of much of the coffee machinery now in use, not only carries on a coffee plantation, which he values at $1,000,000, but raises and refines sugar. The Chocola plantation is about one and a half leagues square, and the annual profits derived from it average about $100,000, I believe.

But now you must go with me to a less pretentious finca. Landing at Champerico, we take places as far as Retalhuleu in a squeaking, jolting, dusty railway. There we transfer our luggage to the backs of some patient burros, and mounting other specimens of the much-maligned species, we trend our way across the hills to the Pochuta district, a three days' journey over wide, well kept roads. On either side of us, as we lazily jog along, are extensive plantations stretching in every direction, for here, as in California, hillsides are no longer disregarded as unfit for anything save pasturage. On the contrary, coffee grown on well-drained hillsides protected from high winds and frosts and exposed to the fullest influence of a genial sunshine, produces a better quality of bean than does even the richest bottom land.

As one looks across the broad extent of fincas, there is no dull sameness to tire the eye, for the greatest variety in both form and color prevails.

The vigorous young fields are a rich dark green, except where the wind catches the glossy leaves and turns their silvery underside toward the sunshine, making them resemble flakes of snow shed broadcast. In older fields, one sees but few strong shoots springing from the midst of a tangle of dead and prostrate branches. Other fields have just been planted and are conspicuous for their trimness and absolute freedom from weedy growths.

The atmosphere is burdened with a rich aroma like that of a prune orchard bursting into bloom. Countless swarms of insects hum and buzz, as they madly flutter in and out of the richly laden flower cups, inebriated and noisy after their copious and intoxicating drafts.—*Californian.*

PROGRESSIVE AGRICULTURE.

The Most Recent Discoveries, Developments, and Ideas in the Science of Farming.

Composition of Rocks.

ROCKS may be formed by the indiscriminate cementing of their constituents, forming a heterogeneous mass known as conglomerate. But most rocks have been formed by a process of natural selection in which materials of like nature have come together and been arranged into definite crystalline forms or homogenous masses. When certain rock materials formed of the elements mentioned in previous papers come together in a crystalline system they form minerals, and these minerals are the chief constituents of all crystalline rocks. In other words, a rock is a mineral aggregate in which the distinct mineral components are held together by a natural cementation.

We find thus a regular series of steps from the simple elements named to the soil itself—viz., elements, minerals, rocks, soils. In a general study of this kind designed for the non-scientific reader, it would be only a waste of space to go into any discussion of the methods by which the different minerals are known and classified. Such a study belongs to the realm of mineralogy; but there are certain general truths connected with this theme which every well-informed farmer should know.

Minerals are distinguished by their general appearance, by their crystalline form, and by their chemical composition. Any one living in rocky regions is able to distinguish limestone or marble from sandstone or granite. In countries abounding in ores of the common metals the general character of these minerals is apparent to all. The mineral which on reduction yields iron is perfectly well distinguished from the one yielding copper. Perhaps there is not one of the readers of this article who is not able to recall some common mineral which he recognizes from its general appearance alone.

The same remark will hold true of the crystalline form of minerals. The six-sided prism of quartz is a good illustration of this, or the cubes of iron pyrite.

When it is not possible to distinguish minerals even by the expert from their general appearance or their crystalline form the aid of the chemist must be invoked. The ultimate composition of the specimen is thus determined, and from this its place in the classified list is fixed.

Some rocks may be entirely formed of one mineral substance. An example is marble, which is composed of carbonate of lime. But all carbonate of lime is not marble. It exists as shells, which, cemented together, forms certain kinds of limestone. Carbonate of lime also forms other distinct mineral substances, such as calcite. Other rocks are made up of a union in more or less definite proportions of various minerals. A typical example is the granite group of rocks which contains the minerals, quartz, feldspar, and mica in quite definite proportions. The most common minerals, and most important from an agricultural standpoint, are the feldspars, micas, hornblendes, pyroxenes, and the carbonates of lime, potash, and soda. These compounds may largely replace each other without altering the crystalline form of the mineral.

The feldspars, micas, hornblendes, etc., are essentially silicates of alumina, lime, and magnesia containing certain quantities of potash and soda. In any given rock, therefore, it may be safely premised that it will be found to be composed in almost its entirety by some half dozen of the common minerals mentioned, viz., carbonate of lime, silica, and silicates of alumina, magnesia, soda, potash, and iron. Such minerals are called the essential constituents of rocks, while those which occur less frequently and in much smaller quantities may be taken as the accidental or accessory rock ingredients. The minerals of rocks may, therefore, be divided into two groups, viz.: First. The original or primary constituents. Second. The secondary or accessory constitutents.

All minerals, in other words, which are found in a rock on its first consolidation are original minerals, but not essential. Thus, in one form of granite quartz and orthoclase (feldspar) are both original and essential minerals, while beryl and zircon, or apalite, while original, are not essential.

The secondary constituents are those which result from changes in rock subsequent to its first consolidation. Such constituents are typically represented by the calcite, chalcedony, quartz, and zeolite deposits which form in the cavities of other rocks.

There are about 50 original minerals which are important agriculturally, and 30 secondary. A complete description of both of these classes of minerals is given by Dr. George P. Merrill, in the report of the National Museum for 1890, pp. 510, and following.

To this report I am indebted for many of the data in the foregoing and following papers.

Properties and Grouping of Rocks.

In the study of rocks attention must be given to their physical and chemical properties—in other words, to their properties as masses and as molecules, the latter being the smallest aggregates on which chemical properties depend. From a consideration of rocks in masses they may be divided into four distinct groups. The first of these is comprised of rocks having a distinct crystalline structure. Granite and crystallized limestone (marble) may be selected as types of this class. The particles of these rocks are crystals, and these particles are joined together by their own cohesion and without the interpositions of any foreign cementing matter. The crystalline nature of the rocks is shown by the smooth faces of the crystals which show by reflected light the character of their minute facets when the rock is fractured.

Rocks of the second group are of a glassy nature. They have been formed by sudden cooling from a molten state, and without time for the crystalline arrangement of their materials. Chemically they may have much the same composition as the crystalline rocks. They are all of volcanic origin. The rock known as obsidian is a fair type of such rocks of natural origin. The slags of blast furnaces are good illustrations of artificial rocks of this group. Glass of all kinds is also an artifical rock, belonging to this group. On long standing the materirls of such rocks may gradually become crystalline, and thus pass over into the first group. In fact, the first group of rocks may originally have been formed by slow cooling, while the second was formed by rapid cooling.

The third group of rocks comprises those which have no crystalline structure nor any tendency to become so. They are completely formless, or, in mineralogic language, amorphous. They are, therefore, sometimes called colloidal or glue-like in structure. They are not very abundant, and are typefied by the silicious sinter from the Yellowstone Park, certain opals, flint nodules, and serpentines.

The fourth group of rocks comprises those of a fragmental or conglomerate nature. They are made up of a miscellaneous collection of rock material, which may have been derived from any or all of the preceding forms, and which is held together by cementing materials of different composition. Sandstone may be taken as a chief type of such a rock. The class to which any rock belongs is easily told even by one who is not an expert. I suggest that the readers of this article spend a few moments as they pass about their farms in assigning the rocks which they may see to their proper classes.

Microscopic Structure of Rocks.

Of less importance to the farmer than the properties of rocks just described is their microscopic appearance. But when the problem is presented of determining the origin of a given soil the microscope and the lapidary become important adjuncts. Nearly all soils, whatever be their origin or degree of translation, have in them fragments of undecomposed materials which yield valuable historic evidence when microscopically studied. Soils which have been formed by the decay of rocks in place are often so deep as to make the examination of the underlying undecomposed rock strata extremely difficult. In translated soils, such as silts deposited by water or wind drifts, or glacial deposits, the direct study of the original rocks from which these soils have been derived is of course impossible. Such soils often contain large fragments of undecomposed material which give a clue to their source, but even these evidences are often wanting. In such cases the microscopic particles alone remain to tell the tale of ages of decay and hundreds of miles of travel. Often fragments of considerable size which exist in the soil are incapable of trustworthy testimony unless cut into thin transparent segments and examined with the microscope by polarized light. Most valuable information respecting the structure of all crystalline rocks is obtained by the microscopic examinations of their segments. This science of lithology, known as microscopic petrography, is still quite young, but by its means great advancement in our knowledge of rocks has already been made.

The efficiency of this method of observation is based on the fact that every mineral has certain definite optical properties. When these minerals are cut into lamina thin enough to allow the light to pass through they present these definite properties in such a way to the eye of the observer as to make their identification certain. I shall not undertake here to explain the phenomena of polarized light, that is, light which to the eye has exactly the same properties as those of ordinary light, and yet which deports itself in a most peculiar and striking manner when passed through certain solutions and certain crystalline substances. Briefly it will be sufficient to say that ordinary light is a vibration in an ether that fills all space, and these vibrating waves travel with equal velocities in all directions from the luminous point producing them. When left free to move through space the surface of such a vibrating mass of ether is always the surface of a sphere. When, however, ordinary light has been reflected from bright surfaces, for instance, the polished surface of the mineral tourmaline, or passed through certain crystals like that crystalline form of carbonate of lime, known as Iceland spar, it loses this property of spherical vibration, and vibrates then only in a plane. In other words, ordinary light might be represented by a solid wooden ball and polarized light by a thin plank.

When polarized light is used in examining transparent sections of rocks the nature of the minerals composing them is at once revealed. When such fragments are found in a soil it is easy to determine the original nature of the rock from which the soil was derived.

Microscopic petrography has given additional evidence of the fact that rock masses are not the unyielding and unchanging forms of matter which they have been supposed to be. Even if rocks do not decay they may undergo profound changes. The minerals of which they are composed are changed from one form to another without altering greatly their outward appearance. Such changes are due both to chemical and physical means. Of the latter heat and pressure are the most active.

No longer blindly need the farmer till his fields without an idea either of the nature of the soil or its origin. Greater without doubt will be the pleasures attending agriculture, when knowledge adds zest to labor and softens the asperities of rural life.

Chemical Composition of Rocks.

The chemical composition of rocks is not always indicated by the character of the soil formed from them. It is true that all the mineral elements found in the soil were originally in the rocks, but the converse of this is not true, viz., that all the original minerals of the rocks are found in the soil. The reasons for this are obvious. In the decay of rocks products are formed which are different in their deportment toward water. Some of these products are more easily soluble than others. As a result of this difference when the products of decay are subjected to the action of water either by leaching or otherwise the more soluble portions are gradually removed while the less soluble remain. The soil, therefore, may be said to contain only such elements of rock decay as are insoluble in pure water or water carrying organic or carbonic acids. Thus the c'ays tend to increase in percentage at the expense of the lime potash and soda which are dissolved and carried away. The salt in the ocean and the vast beds of rock salt have been formed by the solution of the sodium constituents of decaying rocks and their accumulation by the evaporation of the water. In similar manner dissolved lime in the form of carbonate is carried away from the rocks where it originally occurred and deposited in sedimentary beds. Deposits of phosphates are formed by solution and removal of more soluble material, thus aggregating and concentrating the phosphatic matter. But while the soil in its present state does not represent in chemical composition the original rocks from which it was derived, yet it retains a sufficient number of characteristics to enable the expert to determine its origin with a considerable degree of certainty.

In respect of their chemical compositions, rocks are also classified. Thus where silicate of alumina prevails the rock is said to be of an argillaceous nature. It is called calcareous when lime predominates in its composition. With sand as an abundant element it is placed in the siliceous class. The presence of iron in large quantities justifies the application of the term ferruginous etc. Among clayey rocks the ordinary shales of slate may be taken as typical. These rocks are composed largely of silicate of alumina. Among the siliceous forms sandstone is the one best known. The calcareous rocks are well represented by limestone and marble. The ordinary iron ores are the best types of ferruginous rocks. The chemical composition of a rock also has an important influence on its color. The yellow, brown, and red colors of rocks are due almost exclusively to the presence of some of the oxides of iron. Even in minute quantities iron oxides are capable of imparting very deep tints to rocks. The gray, green, and black colors of rocks are also generally due to iron in a lower state of oxidation than in the colors first mentioned. Other metals, such as copper, nickel, cobalt, and chromium, also give color to rocks, but not in the degree possessed by iron compounds. Blue and black colors are often due to the presence of carbon.

In other cases the colors of rocks may be due to their physical state and not to the presence of mineral coloring matters. Rocks often change their color when exposed to the air. This would naturally be expected when it is remembered that metals may change in the degree of their oxidation, and these changes would naturally be attended by variations in tint. Often rocks which are nearly black from the presence of carbon will turn almost white on exposure. In general, however, it is the tendency of rocks to deepen in color on exposure.

Black marble is an instance of a rock in which the color is due to carbon. Old red sandstone illustrates the tendency of iron to stain rocks red. The white color of chalk, on the other hand, is due to its physical state, it being made up of a large number of separate particles. This may be illustrated by taking a piece of ice and crushing it to fine particles. They will have a white color.

The change due to exposure is well illustrated by a white limestone found near Newburry, Mass., which changes to a dull red on exposure, due to the oxidation of iron carbonate which it contains.

The luster of rocks may hardly be ascribed to their chemical composition. It is rather due to their physical state, yet it seems proper to say a few words concerning it here. Rocks resembling glass are said to have a vitreous luster. An iridescent luster is often seen in pieces of bituminous coal. Some varieties of iron ore have a metallic luster. Certain minerals, such as pyrite and chalcopyrite, have the luster of gold. The luster is often of value in determining the nature of a rock or mineral. Such briefly are some of the chemical and physical characteristics of the rocks from which the soil of our fields is made.

Orchid Tea.

A tea made from a species of orchid has been drank for some 50 years in France, and, although it is an expensive luxury, finds an ever-increasing sale. It is prepared from Angræcum fragans, a species allied to the vanilla plant, which has a strong aromatic odor. The leaves and stalks are simply dried, without any application of heat; and to make the tea, a small quantity of them is placed in a closed vessel filled with cold water, and boiled for 10 minutes. As with ordinary tea, milk, sugar, or rum may be added to this decoction or not, according to taste, and it is said to be equally agreeable whether drunk cold or hot. Material sufficient to furnish 50 cups cost about 50 cents, and its name in Paris, as in Mauritius, whence the custom of using it is said to have come, is "faham."—*Garden and Forest.*

CRANBERRY PICKING.

How the People on the Bogs of Cape Cod Harvest the Little Red Berry, and the Wages They Receive.

In the Autumn most of the inhabitants of the little towns of Cape Cod move themselves and their household goods out to the cranberry bogs. Generally by the middle of September they have left the small settlements quite deserted. This is a season of the greatest interest to the poor people. They are given a chance to earn generous wages according to their industry and the speed with which they work, and vast numbers take advantage of it. Those who have to come from a long distance occupy the houses on the bogs. These are mere huts, but rudely fitted up. They have bunks against the wall, and sometimes the luxury of a stove. They are made to accommodate just as many as it is possible for them to hold, and every spare inch of space is utilized. It is on this account that so much foreign labor is employed on the remote bogs, for those natives of the better class prefer to work near enough to their homes to be able to reach them by vehicles at night. The pickers who have quarters on the bogs used to furnish their own food and cooking utensils, but late years there has been another arrangement, whereby the food supply is made general, and meals are served in a large tent where all hands are furnished with board. It must present a motley scene, when these hundreds of pickers and their wives and children assemble at meals.

Supplies are obtained from traveling grocery wagons from the large towns which visit the bogs once a week. They also visit the homes of the pickers who return at night. These have an open and confiding way of leaving their keys on the outside of their houses, together with their orders for provision, that the groceryman may know what to leave, and leave it inside the door.

The foreign element employed is made up mostly of Italians and Portuguese from the large towns and cities of Massachusetts. The work is considered by them very light, and the wages are the mean wealth to them. They are paid on the average 10 cents for every measure of berries picked, and a measure holds six quarts. The average pickers can gather from 25 to 30 measures a day, which many of the best of us might consider first-class pay. The hours, too, are short, for the dew gathers about 5 o'clock in the afternoon, and does not dry off until 9 in the morning.

The best of order is not always preserved among the foreign laborers, and sometimes some of the reliable native workers have to act as constables. Even then, fights and disturbances often occur.

It is really wonderful how these people, unused to our country and unable to speak our language, find their way. In order to reach some of the bogs, they often have to travel for miles on foot, through the wild woodland and scrubby Plymouth forests, crossed by lonely roads which never seem to lead anywhere in particular. At the hight of the season the bogs are the scene of the liveliest activity. On some of the larger ones hundreds of hands are employed, and when their families are included, it makes a colony of some little size. Some of the pickers only see each other once a year, and then gossip enough is exchanged to last them through the season. The children join in the work, and those who are too young play together on the turf. They are taught to pick as soon they are old enough, and the man makes the greatest profit who has the largest family employed as pickers.

The vines are tough and tear and scrape the hands, so that the women often find it necessary to wear old, thick gloves to protect their hands. Sometimes a machine is used which is strapped to the wrist. It has long, slender teeth which shut together and strip off the berries. At first there was a strong prejudice among the growers against the use of this. They claimed that it injured the vines, but now it is coming more into favor, and is a great saver of labor. After the fruit is picke , all the sticks, stones, and dirt which are gathered with it have to be removed. This is called screening. It used to be done by hand, and women were employed to do it, who were paid 15 cents an hour. Nowadays, there is a very ingenious machine used, which does the work automatically. The berries are poured into a trough, the bottom of which slides to and fro. A small fan blows out the chaff and debris, while the clean berries fall through onto a revolving belt of canvass; from here they fall on a slanting board from which the good ones bounce into a tray placed for them. Only the good ones bounce and the imperfect ones fall into another receptacle. The good berries are then packed up in clean barrels and are ready to be sent to us to make sauce for our Thanksgiving turkey.

"Sing a Song of Sixpence."

You all know this rhyme, but have you ever heard what it really means?

The four and twenty blackbirds represent the 24 hours. The bottom of the pie is the world, while the top crust is the sky that overarches it. The opening of the pie is the day dawn, when the birds begin to sing, and surely such a sight is fit for a king.

The king, who is represented as sitting in his parlor counting out his money, is the sun, while the gold pieces that slip through his fingers as he counts them are the golden sunshine.

The queen, who sits in the dark kitchen, is the moon, and the honey with which she regales herself is the moonlight.

The industrious maid, who is in the garden at work before her king—the sun—is risen, is day-dawn, and the clothes she hangs out are the clouds. The birds, who so tragically end the song by "nipping off her nose," is the sunset.

So we have the whole day, if not in a nutshell, in a pie.—*New York World.*

Thunder in November indicates a fertile year to come, says an old proverb.

PAMPAS GRASS.

The Cultivation of this Waving Plant in Southern California.

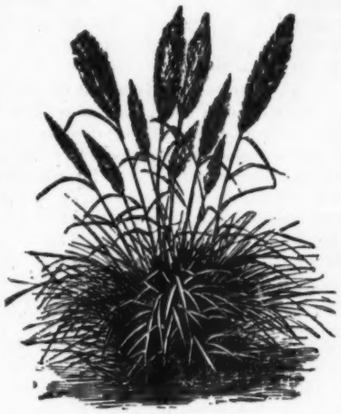
VERY few of us who have seen the plumes of waving pampas sold in the streets know where they are obtained. In our own country they are grown most extensively in southern California, where they form an important source of industry, though the pampas was originally a native of the plains of South America.

It is mainly used for decorative purposes now, but it is thought that some day, if it becomes cheaper, it will be used for making fine grades of paper, as it has great durability.

There are a number of varieties of the pampas grass, but the orange and lemon-colored plumes are the two kinds most valued. These, growing beneath the trees of the orange and lemon, show a most beautiful effect of color.

When the industry was being developed great caution was displayed and an air of mystery surrounded it. An attempt was made to keep the new enterprise in the hands of a few, who would realize enormous profits, but in the course of time the question was discussed in the newspapers and the monopolists had to give in to the many, who were not slow in setting out extensive plantations.

The plant has thin bayonet-shaped leaves, often not an inch in width, and in length from 10 to 20 feet. They grow upward and then curve over until their sharp-pointed tip rests on the ground or on the leaves below. The plant in itself is very ornamental, and varieties of it are occasionally seen in our gardens in the East.



PAMPAS GRASS.

When growers wish to set a new plantation, they take the full-grown plants from the ground and divide the roots after cutting off the tops. Then they plant the roots in rows from 10 to 16 feet apart. The plant is hardy and quite easily grown. Sometimes they are made to occupy the whole plantation, and sometimes set in between rows of walnut or orange trees. When they grow too large either the trees or the pampas grass has to be removed. It is generally the grass, but sometimes a tree will have to go to make way for a particularly fine pampas plant.

The right time to plant them is in January, and they grow so rapidly that in seven months they will show a few plumes. From May to August they need much irrigation and careful cultivation, and in August the plants send out long spikes, which are the plumes in embryo. It is time to cut them as soon as a small bit of white begins to show on the tip. They are counted as they are cut, and strewn on the ground in piles of 20. The cutters are paid by the thousand, and experts are sometimes able to cut 7,000 in a day. Each hundred cut by the laborers is registered for them on a card by the overseer.

The men who work on the plantations are mostly Mexican, and though these sons of the Southland have the name of possessing an indolent and rather careless nature, they show most marvelous skill and care in their work. The visitor is always charmed with their courtesy and pleasing manner.

If the plumes open on the plants they have no commercial value whatever, as they would fall to pieces in the course of a short time. With each year in the life of the plant the plumes grow larger and fuller, and at the end of five years the plants produce a few less in number, perhaps, but much larger ones than before. The length of a plume is from 18 to 33 inches.

GATHERING THE PLUMES.

After being cut, the plumes are taken to the huskers, who sit leisurely under the trees in the shade and peel off the outer covering of the plumes. This task is not at all difficult. The huskers are also paid by the thousand, and a good deal of rivalry exists among them. Some time ago a championship belt and a medal was given to a man for husking 39,000, and there is no disputing that his industry deserved a champion belt, if not something more substantial.

After the husking the plumes are spread, and this requires deft handling and a great deal of skill. Fog and even light rains do not injure them, but they are never left exposed to the sun and wind. After 30,000 or 40,000 are ready to be taken in, many hands have to be employed to gather them that they may not be spoiled by too much sun. Countless women and children, as well as a great number of men, are brought into service at these times. They pack the plumes on broad shelves in the curing houses, where they are made to acquire the silken finish which adds so much to their beauty.

When the plumes are taken out of the casing they look very flat indeed, owing to the heavy pressure to which they have been subjected, but moderate heat will cause them to fluff out again and look as beautiful as ever.

The pampas is rightly called the king of grasses. It finds a ready market in Europe, where it is sold to manufactories of ornamental articles. Some of them use at least half a million plumes per year, which makes a fine profit for the California growers. They have planned, it is said, a wonderful display for the Columbian Exposition, and it seems as if their exhibit should be of great beauty, for they do not lack the material and means to make it so.

England has been the latest, with Italy, to recognize and appreciate the beauty of the pampas. In Germany they find great favor. When used in England as wall decorations, they are usually arranged in groups of three, which in a way represents the old Bohemian coat of arms adopted by the Prince of Wales, with the motto Ich Dien, (I Serve).

THE ROOF TREE.

The accompanying cut, made from a photograph, shows the actual process of harvesting the gum in the Brazilian forests, whose juice is the basis of the best roofing now in use. This tree is indigenous in the Amason and Orinoco Valleys. There are many species of it, some of the inferior varieties being found even as far north as the Florida Peninsula. The prime article, however, can only be procured from a limited number of the family, chief of which is commonly called the Rubber tree, whose dried gum is commercially known as Caoutchouc. A row of incisions is made around the trunk, at the lower edge of which cups are attached, and left to catch the sap. Our picture shows a native in the act of removing the cup filled with gum, this being poured into the bucket held in his left hand, where it soon coagulates, in which consistency it can be packed in bundles and transported on the heads of natives from the interior to the coast. From Para or Bahia it is shipped to all parts of the world, one of the chief points of destination being New York City. The background of the picture shows the foliage of younger trees and other characteristics of an equatorial jungle. The leading consumers of this article in the United States is the Indiana Paint & Roofing Co., of 46 West Broadway, New York City. This company utilizes the gum of the tree as the chief ingredient in the manufacture of a variety of roofing material which within the last twenty years has become so popular that it is rapidly supplanting all other kinds. The causes of its inroads upon both the primitive shingle and its modern substitutes have been various. Rubber Roofing has been found to be the most durable of all roofing when put to the test of the weather in climates ranging from the very coldest to the very hottest, as well as in wet and dry seasons. It stands equally well the Summer sun without melting, as the Winter ice without cracking.

In this age of competition price is a vital consideration, and the roof we are discussing is not only the most durable and easiest for anyone to apply on flat or steep surface or over old shingles, but is far and away the least expensive. Full particulars relative to Rubber Roofing will no doubt interest many of our readers. The company will gladly give anyone an estimate as to its cost for any size building if its length and width be stated; all that is necessary is simply to write them at once.

English Ivy.

The English ivy attains so great an age that in England they say it never dies. There are ivy stocks 10 or 12 inches in diameter which are known to have been planted as slips 600 or 800 years ago. An English Winter is not severe enough to kill it, while the extreme moisture of the climate induces a luxuriant growth and a rich green, which is unsurpassed by nothing in the vegetable kingdom. It is planted against the old walls, and often trained on screens to conceal unsightly buildings, and everywhere forms one or the most attractive features in English landscape.

The Germans Love Fine Linen.

In the German household the love of linen is a passion. During the French wars under Napoleon, when from every town and hamlet the terror-stricken people fled before the approaching armies, before all else they sought to save their many chests of homespun linen, and when peace returned what had escaped the Argus-eyed enemy was tenfold more precious because of the horrors witnessed and the dreadful pangs endured. And even to-day the German woman prizes far above rubies her piles of snowy linen, the labor of many happy hours.—*Garden and Forest.*

Covey, Bevy Flight, and Flock.

Different terms are applied to different groups of animals. The following are examples: A covey of partridges, a nide of pheasants, a wisp of snipe, a bevy of quails, a flight of doves or swallows, a muster of peacocks, a siege of herons, a building of rooks, a brood of grouse, a plump of wild fowl, a stand of plover, a cast of hawks, a watch of nightingales, a clattering of choughs, a flock of geese, a swarm of bees, a school of whales, a shoal of herring, a herd of swine, a skulk of foxes, a pack of wolves, a drove of oxen, a troop of monkeys, a pride of lions, and a sleuth of bears.

THE COLUMBIAN EXPOSITION.

What the Agricultural Department Will Contribute to the Horticultural Exhibit.

UNNING hands are busily preparing the valuable and interesting horticultural exhibit which the Department of Agriculture will send to the Columbian Exposition. It is being prepared by numerous workers who each day turn out magnificent specimens in wax. It requires infinite patience and a grat deal of skill to convert cloth into what we would mistake for living growing plants. The cloth is made of the finest fabric, and is something like bolting cloth. It has a thin coating of wax on each side, and is so durable and strong that it is difficult to damage the articles by handling after they are made.

In the room where the men and women work at the specimens are tables and cases strewn and filled with pieces of cornstalk, branches of the cotton plant, strawberry leaves, green gooseberries, etc., which had been made by hand and not yet completed. A portion of the Division of Pomology is finished, and includes models of fruits, which are now exhibited in long cases under glass. These are molded in wax and delicately colored in oils, and are most faithful representations of nature. In one case are the plums, from the largest to the smallest. They are of every kind, and there are many of the same kind, but grown in different States, which vary greatly in size, and thus show the effect of climate. Among them are no duplicates, and all were modeled from separate specimens of real fruit.

This also applies to the numerous apples, pears, and peaches displayed. One scarcely realizes that so many kinds of the same fruit grow until he has seen them all together. There is every kind of pear, from big rough-coated ones nearly as large as melons down to the sweet little Seckle. The golden-colored Bartlett looked particularly natural and tempting. The apples appear as if they had just dropped from the trees, and it is disappointing to reflect that they never had their home in an orchard. There is a row of Ben Davis made up of apples from different parts of the country. The leading one in the row is as large as a small cabbage, and they dwindle in size to the proportions of a mandarin orange. The fair Golden Pippin and the pretty Maiden's Blush are there in all their natural perfection. Oranges, lemons, and limes are also represented. Some are whole and some are bisected, showing the interior.

ENGLISH SPARROW (*Passer Domesticus*).

But the peaches! They are the most beautiful of all. They have the same furry skin and delicate tint as in life. Only, as one of the gentlemen having the matter in charge said: "It spoils the effect to raise the glass lid and touch them, for then you get the smell of the wax and paint, and they do not feel as solid as you expect them to."

Near this beautiful display of fruit are cases showing some of the economic birds. This part of the exhibit comes under the division of Ornithology.

It is still an unsettled question as to which birds the farmer shall kill and which he shall encourage, and it has not been determined, in respect to some birds, whether the amount of good outweighs the harm which they do, or *vice versa*. The object of this part of the show is to give in a practical way some of the effects of birds.

High up in one corner of the case hangs the branch of a peach bough covered with as beautiful pink blossoms as ever grew in an orchard. Perched on the bough are a number of vicious looking sparrows eating the precious blossoms with an apparent relish. This is one point scored against the English sparrow in the minds of all who see him at his mischievous work.

Underneath, on the floor of the case, is a little patch of ground where bright dandelions are growing, or rather look as if they were growing. Here a redbreasted robin is eating insects which he finds in the ground. He has an ugly-looking beetle in his bill, and on each side of him are two more sparrows watching their chance to rob him of his choice morsel. This shows as plainly as they can be put, reasons for exterminating the sparrow, declares him a nuisance, and proves conclusively that he is an enemy to farmers, their crops, and our sweetest song birds.

In another corner of this case is a large elm bough. On this will be placed the Cedar Bird. He will be shown as eating the Elm Tree Beetle, which lives on the leaves of the elm. The Cuckoo will be seen eating the hairy caterpillar from a bough of apple blossoms. He is the only bird which has a taste for these caterpillars, and it is said of him that he will eat and continue to eat until he is completely lined inside with their wooly hair, and yet be as well off and as happy as ever. This is another practical lesson to the farmer, and especially to the amateur, who seeing the bird among his fruit trees might think that he was injuring the blossoms and be tempted to destroy him for his robbery, when in reality he is helping to do away with one of the greatest pests known to the orchardist. When the orchardist remembers what serious damage these caterpillars can do, he will welcome the cuckoo as a helpful friend and call him blessed.

KING BIRD (*Tyrannus tyrannus*).

The King Bird, or Bee Martin, as it is called, is another robber whose thefts are exposed to the public. He has a habit of making the honey bee a part of his diet. Two or three of these birds are mounted on a branch, in a fork of which their nest and eggs may be seen. One of them is eating a bee. This bird is quite well known, and wears on its head a pretty pointed crest. Though it is small in size, it has a reputation for being a plucky fighter, and has been seen to dart suddenly down on other birds and peck them on the head so that they die. Of course, the beekeeper who finds this bird devouring his bees is perfectly justified in destroying him, for he will probably do the same thing again; still, he is not without his virtues, and it has not been decided that he is detrimental. The Bee Martin lives almost entirely on insects, and destroys quantities which are very harmful to vegetation. Among the birds he considers his enemies are crows, which are quite fond of young chickens. He does not hesitate to kill crows when he has a chance.

The farmer will also see at the fair a group of familiar-looking crows engaged in their favorite occupation of pulling corn. Dr. Barrows, of the Agricultural Department, who is helping to solve the disputed question, says that the Department does not care to say whether the crow should be destroyed or not. There are so many arguments both for and against him that a final decision has not been reached and no bulletins have yet been published on the subject by the Department. One means of investigation to which the Department has resorted is communicating with taxidermists all over the United States. They send in alcohol the stomachs of the birds which they mount, and the Department determines by analysis the nature of the food which the birds eat. The crow has been found to eat grain, berries, great quantities of ripe fruit, and small animals, such as young chickens, field mice, and all kinds of insects. It is not known whether some of these small animals are eaten dead or killed by the crow and eaten. Besides pulling corn and eating fruit and chickens, the crow helps to spread the growth of poisonous plants and weeds. He eats the berries of plants such as poison ivy and pokeberry not for the seed, but for the flesh. The seeds are not digested, but are afterward choked up by the bird, and go on germinating just as if they had never been swallowed. But the millions of insects which the crows devour should be taken into consideration. Perhaps his virtues will, after all, counterbalance his faults.

SHARP-SHINNED HAWK.

A card will be put on the case containing the crows, which will give in tabular form a list of the food eaten by the crow, and the same will be done with some of the other birds, so that the farmer may make his own comparisons and draw conclusions for himself.

There are three kinds of hawks shown in the case. It is natural to think of the hawk as harmful, and we call to mind, perhaps, a brood of frightened and perturbed chickens being swooped down upon by a great cruel bird of prey. At the same time we hear of field mice and gophers which burrow and make their homes in the fields of grain and live off of its delicate roots. One of the hawks is represented with a field mouse in its claws. It has been decided that the harm which they do to chickens is but trifling compared to the help which they give in exterminating the harmful little animals in the fields. When a farmer sees a hawk near his place his first impulse is to kill it, but this is because he cannot distinguish between the harmless and harmful kinds. It is a fact that a few progressive farmers have been known to allow hawks to nest on their farms year after year unmolested, knowing that they help to rid him of some of his worst enemies. They eat no dead animals, but are fond of toads, snakes, mice, and an occasional chicken. Those fierce hawks which destroy smaller birds should, of course, be done away with. One of these may be

seen in the case with a flipper under its foot, but there are others which are very slugglish, and do no harm but a great deal of good.

The object of those who are working on the exhibit is to make it as attractive as possible, that even uninterested persons may be tempted to give it their attention, and so be impressed with the important facts set forth in the different scenes from the life of the birds.

Two Thanksgivings.

Thanksgiving morning in New England, the greatest day of the year. The snow plow was early at work with all the young folks aboard, the four yokes of oxen steaming in their endeavors to break the drift, moving slowly on amid joyous shouts and laughter. As the sun rose higher, the old skating pond was visited; the snow was swept by a score of brooms in earger hands, and soon curious skates with rounded points tipped with brass acorns, which had been hanging for years in the old attic, were bearing them about the pond, and the delights of youth renewed.

The houses in the village are an eighth of a mile apart, every occupant is a cousin, and the horses are rounded up at each until the old sleigh fairly groans with the burden. Who shall describe the New England Thanksgiving dinner? The steaming turkey, the countless kinds of pie—apple, custard, mince, cranberry, lemon, and Washington; the fragrant apple sauce, the biscuit, cookies, brown bread, and beans; the young porker as natural as life, with a lemon in his mouth; the foaming cider, very hard, from the fourth barrel on the right in the cellar for the old folks, and very mild from barrel number one, for the others; the smiles and laughter, the universal good nature, the thankfulness of it all—who shall describe it? It can only be experienced in these old New England homes from which has radiated much of the goodness and godliness that has made American homes all over the land what they are, what they ever will be.

It was but a few weeks after Thanksgiving in California. Bountiful rains had come in October, instead of lagging on until the mission bells told of Christmas time, as was their custom, and not only man but all nature gave thanks. A year before, a young girl had spent Thanksgiving day among the New Hampshire hills, and had looked out upon the deep snow of an Eastern Winter. To-day she stood beneath the blue sky of California, her mind reverting to the events and surroundings of the previous year, in silent wonderment at the contrast. She stood in a field that King Midas might have touched; a blaze of golden yellow stretched away in every direction, a veritable field of the cloth of gold. The color came from the poppies that covered the ground, extending in sinuous trails to the foot of distant mountains, whose summits were white with snow. From a distance the flowers presented a tint of fiery hue, so deep that she was told in days gone by the mariners on the distant ocean recognized the glow, and knew the slopes as the land of fire. At her feet the floral showing was seen to be made up of many kinds. There were violets shyly nodding in the breeze—pale cream cups—of exquisite design, from the gaudy painter's brush, the wild heliotrope that filled the air with fragrance, and many more bewildering to the eye. It was the beginning of Winter, and in the old New England home great snow flakes were slowly sailing through the air, the advance guards of the snow storm. Here, also, Winter was coming, and this wealth of flowers was the greeting, but how strange a Winter—green not white—was its emblem. On either side groves of oranges and lemons stretched away, their boughs supporting green globes that would soon take on the tints of the poppy. Some were in blossom, and the soft wind wafted the odor across the field of flowers, the incense of nature, while the white petals falling changed the earth to a creamy white, the snowflakes of this California Winter.—*Californian.*

Woman's Building at the World's Fair.

ARMS AND LEGS, WITH RUBBER HANDS AND FEET.

The artificial leg with the rigid ankle, in which a life-like movement was obtained at heel and toe, was the invention of A. A. Marks. The important end obtained by him was the doing away with straps, hinges, or other cumbersome and complicated appliances considered necessary, prior to the discovery of Mr. Marks, to give flexibility at the ankle. The remedy of Mr. Marks for all the troubles resulting from the old form construction was very simple. It was simply a rubber foot, modeled after the human original, pliable and flexible at both heel and toe. It was found that the motion in walking with one or even two of these rubber feet could not be ordinarily distinguished from that of a person whose pedal extremities were natural. The same material has also been utilized in the manufacture of an artificial hand. Tens of thousands of both arms and legs have been made and are now being worn in all parts of the world. The following letter is a fair sample of thousands of testimonials received by the firm:

MR. A. A. MARKS.

DEAR SIR: After having worn one of your artificial legs with rubber foot for more than fifteen years, I have no hesitation in saying it is the best leg in use, as it is simple and the most durable of any that I have seen. I have examined and worn five different makes since 1862, and find none as useful as yours. I can heartily recommend the rubber foot as the most durable and easy to handle. I am a blacksmith, and shoe horses. I have dug wells and quarried stone, and other heavy work. I can walk farther in a given time than any man can on any other kind of a leg, with the same length of stump as mine; it is only three inches from center to hip-joint.

Yours, etc., E. LINCOLN.

By our copyright formula applicants can supply us with all the data necessary to secure a fit while they remain at home. One-half the legs and arms furnished by us are made from measurements and profiles without our seeing the wearers. Fit always guaranteed. A Treatise of over 430 pages, with 260 illustrations, and nearly a thousand testimonials, sent free.

A. A. MARKS, 701 Broadway, New York City.

ESTABLISHED 40 YEARS.

SUGAR BEET WORK.

Most Satisfactory Results Obtained from the Crop in Nebraska During the Present Season.

EDITOR AMERICAN FARMER: The work of harvesting the beet crop is progressing with great dispatch in the beet districts of Nebraska, and the greater part will soon have passed through the factories.

The weather has been extremely favorable for "lifting" and removing the crop, excepting in the respect that the ground is so dry and hard that the act of getting the roots out has been somewhat difficult; yet the difficulty was associated with an advantage, for the beets have been lifted without any particles of soil attaching to them, and consequently the operation of "cleaning" has been dispensed with.

In respect of the sugar contained in the beet, the crop is a great success. Carloads of beets have been delivered at the Grand Island factory which analyzed 15, 16, and even 17 per cent. of sugar. We also know of given examples of the year's crop which were found to average 17 to 18 per cent. as the beets were taken out of the ground. That is a magnificent showing.

The factories are purchasing beets upon the terms contained in the contracts made by the beet sugar companies with the growers at the commencement of the cultural season. The beets have to be delivered "free from dirt, clean, and in good condition, with the tops closely and squarely cut off at the base of the last or bottom leaves." For the beets delivered upon the given conditions the following prices are paid:

$4 00	per ton	for	beets	containing	.....	12	to 14	per cent. sugar.
4 50	"	"	"	"	.....	15	"	"
5 00	"	"	"	"	.....	16	"	"
5 50	"	"	"	"	.....	17	"	"
6 00	"	"	"	"	.....	18	"	"
6 50	"	"	"	"	.....	19	"	"
7 00	"	"	"	"	.....	20	"	"

Frozen or otherwise damaged beets are refused. Payments are made to the growers on the fifth of every month for beets delivered during the previous month. Special rates are obtained by the sugar companies from the railroads, and the freight is paid by the companies and deducted from the amounts due the growers at the time of settlement. The companies are prompt and precise in making settlements, and although individual growers may be found who disparage the factory methods, full and general satisfaction usually obtains.

What continues to be required is the magnificent Fall weather which has prevailed in Nebraska up to date, and the best yield per acre, with the largest weight of sugar per acre that have been grown, will be secured.

We are awaiting the latest news from the centers of beet sugar production in Europe. The latest data do not alter the conditions stated in our last communication to THE AMERICAN FARMER. The yield of beets per acre, expressed in tons, will be larger in Germany, France, Belgium, and some parts of Austria and Russia than in this country, but there is reason to believe that the quality of Nebraska beets will be more than equal to the average of those grown in Europe. The highest sugar readings obtained from foreign sources do not exceed 15 per cent., whilst numerous examples have been observed in our beet districts where the crop was running 16 to 17 per cent. Of course, the weight of beets per acre in such cases was low. This season will certainly contribute results which will aid in placing our infant beet sugar industry upon a permanent basis. We shall be more specific in our next letter.—W. MAXWELL, Schuyler, Neb.

Love's Victory.

When I am dead, dear love, if thou should'st feel
Thy loneliness too hard a load to bear,
And that another could thy wound anneal
With gentle tenderness and loving care—
My spirit hovering near thee would not chide,
E'en should'st thou smile on a beloved bride—
When I am dead!

I only ask she be not like to me—
As I was dark, let her be fresh and fair;
Instead of brown locks waving wild and free,
Close to her head coil round the golden hair;
And may she tower stately, grand, and tall;
I shall not mind that I was frail and small—
When I am dead!

So that she come not nestling to thy side,
Nor climb up to the level of thy heart,
And lavish kisses without stint or pride,
Or beg sweet pity for some pain or smart,
As I was wont:—nor Love's expression crave
To be, as I, Love's gladly-fettered slave—
When I am dead!

Nay, love her as thou wilt, and as she will,
With fullest meed, and with a conscience clear,
E'en though thy memory hold my memory still,
In quiet corner garnered, close and dear,
If a true heart should give thee of its best,
As I did once, I shall the happier rest—
When I am dead!

—*Temple Bar.*

THE SOLITARY GIRL.

A Sharp Detective Secures a Criminal Through Love.

BY ARCHIE FAIRBAIRN.

THEY SAT together on deck and chatted in a sheltered corner which he had found, and the American girls who had looked askance at her during the first two days of the Arcadia's passage across the Atlantic reckoned that the "Solitary Girl" had found a man. One of them even averred that she had seen the process of self-introduction take place; that "Steely Eyes" had inquired whether the "Solitary Girl" minded tobacco smoke, after carefully placing himself in a position where, owing to the strong westerly breeze, it was impossible that she should inhale it. She had answered in the negative, "you bet your sweet life," and the ice thus broken they had drifted into conversation.

That she should have earned so soon after leaving Queenstown Harbor the title of the "Solitary Girl" argued no very surprising gift of observation or ingenuity on the part of the young ladies returning to their beloved States, who had criticised her in her loneliness.

They had assigned her a nickname as they had to the man beside her, and she was as unconscious of it and of the interest they took in her as she had been of the clear gray eyes which had followed her at intervals since she had first appeared on deck until the owner of them addressed her.

He had been so perfectly respectful in his manner, had seemed so absolutely indifferent whether she spoke to him or not when he occasionally made a trivial remark as he sat near her, that she felt no need to retreat as she had done hitherto when others, either men or women, had shown signs of desiring her acquaintance, and an hour later when someone claimed the deck chair on which she was sitting and he had offered to lend her one of his, she accepted it with a friendly smile.

"I have not got one," she explained, "we started in such a hurry."

"Then you are not traveling alone?" he asked.

"No, my father is on board, but he is too bad a sailor to appear yet."

He walked off hardly waiting for her to finish her reply, brought the chair, and arranged it with the one he had occupied.

"I was expecting a friend on board at Queenstown, and had brought one for him," he remarked, "but his train was delayed and he missed the boat."

"It's a bad train that does nobody any good," she answered with another smile, sinking back restfully as if not afraid of being disturbed again, and before they parted at dinner time he tied a label to it with her name upon it in pencil.

"How did you know my name was Hamilton?" she asked.

"The purser told me," he said. "I think he has moved me to your table. I asked him to do so. My name is Fletcher—John Fletcher."

And that evening, instead of sitting solitary next to the empty seat which her father should have occupied, Miss Hamilton talked almost cheerfully to Mr. Fletcher, and a man who had vainly tried to find a topic to interest her the evening before found a friend with a knowledge of hides equal to his own at another table.

"He's an elegant man," said Miss Lorania Luck, of New York, "what can he find to like in her? That's what beats me."

And Miss Geraldine van Hooten answered, "Dollars," founding her theory on the fact that Miss Hamilton's father was occupying the best "stateroom" in the ship alone, and that he had not yet condescended to appear on deck and mix with his fellow-travelers. "Or perhaps he's noble," she said, speculatively. And Miss van Hooten indorsed her friend's opinion that Mr. Fletcher was "elegant."

As they had applied the term indiscriminately to the big rollers the Arcadia had encountered outside Queenstown Harbor, to the furniture of the saloon, and to a shoal of porpoises, there was nothing startling in their applying it to a tall angular young man, with a determined jaw and a black mustache dividing his face with a line as straight as a ruler over what seemed to be a rather thin pair of lips. An elegant man in the ordinary plain British acceptation of the term he certainly was not, whatever Miss Lolie Luck may have said and Miss Hamilton may have thought, and Miss Hamilton's eyes showed that she thought well of him.

"She's mean to keep him to herself like that," said Miss Luck one afternoon; "she looks at him when he comes on deck till he turns and she catches his eye, and if he does not come and plant himself down by her right away, she'll look at him till he does, and when he sits down she has nothing to say."

There may have been some truth in Miss Luck's remarks. She had a quick eye, and possibly Mr. Fletcher was himself feeling that he was himself not extracting much amusement from Miss Hamilton's conversation. He was leaning back in his chair looking at her from under his half-closed eyelids.

"So your father is going to leave the old country and settle in America?" he said slowly; "not leaving his country for his country's good, I hope?" he added with a half laugh.

It was the fourth time that afternoon that he had mentioned her father's name; three times she had turned the conversation to other subjects, and now she was sitting looking seaward, silent and with her cheeks crimson. He must have been a quick-witted man, though, to notice the effect of his speech and jump to the conclusion which he did.

"Forgive me," he said, bending forward and speaking earnestly, "forgive me, Miss Hamilton, if I have said anything to hurt you; you know me very slightly, but well enough, I hope, to know I would not have done so willingly."

"Many a true word is spoken in jest," she said, half to herself, moving as if she would rise from her chair; but he touched her arm and she sat down again.

THEY SAT TOGETHER ON DECK.

"I must have your forgiveness for what I said," he insisted, "you know I would not betray any confidence. Why should I? Who am I that I should do so? I would do anything rather than offend you—what can I say? Stay—you see that man?"

He was pointing to a fair little red-faced man who was diligently trying to obtain an appetite for dinner by pacing the deck.

Miss Hamilton nodded. She had turned pale from red, and the lonely, frightened look had come back to her eyes. She looked at the little man indifferently.

"He said he was at school with you, and he called you by some other name when he came up and spoke to you," she said.

Mr. Fletcher was looking at the little man with an expression that was not exactly benevolent.

"He called me by a name that was not Fletcher, Miss Hamilton, and I'm not quite sure that he was not right; so you see that I have a claim on your indulgence, almost on your confidence."

But whatever Mr. Fletcher may have expected Miss Hamilton to say, she said nothing then. The afternoon had grown colder, and the horizon was full of damp mist. She pulled her cloak tightly around her with one hand, and with the other fingered restlessly the arm of the chair on which she sat. Mr. Fletcher looked annoyed; he moved his chair a little closer to hers and glanced rather nervously at the small, well-gloved hand as it rested for a moment on the chair arm nearest to him. He had never been at a loss for words before in her society, he must have been conscious that he had done most of the talking during their acquaintance, that on trivial topics he had found a flow of conversation which had amused her, and that when he had touched more serious subjects he had secured her interest, or even drawn her into argument, and yet he sat silent for 10 whole minutes looking at her. Miss Lorania Luck grew impatient; she could see them from where she sat and she let her book drop on her knees to watch.

"I believe they've quarreled," she said to herself, and then more loudly, "Mr. Smith."

The fat little man, who was pounding the deck for the good of his health, paused and bowed.

"I shall be much obliged if you will allow me to join you in your constitutional," said Miss Luck, and as she took his arm and paced the deck with him she confined to him with characteristic candor that she suffered from dyspepsia.

"Too much iced water," said Mr. Smith, sympathetically. And having found a topic interesting to both of them they fell to discussing the comparative merits of a British and an American dietary.

"Keep this side of the deck," said Miss Luck; "there's a perfect blizzard the other side of the smokestack."

In the warm shelter to be found in the neighborhood of the funnel Miss Luck lingered; in the more exposed portions of the deck she raced Mr. Smith along till he was almost out of breath.

"Nice comfortable place your friend 'Steely Eyes' has chosen," she said to the companion who was trotting to keep up with one of her fastest spurts.

But Mr. Smith did not know whom she meant.

"Mr. Fletcher," she explained; "he has been sitting there all the afternoon with Miss Hamilton."

But Mr. Smith denied all acquaintance with Mr. Fletcher.

"But I've seen you speaking to him twice," said Miss Luck; "twice since we came on board; once when you spoke to him on deck and held out your hand and he turned his back on you, and once after that, late one night when you were talking together like old friends in the smokeroom—I looked in as I walked by the door."

"Your bright eyes see everything, Miss Luck," protested Mr. Smith.

"There are no flies on Lolie," said Miss Luck, gracefully acknowledging the compliment; but refusing to be put off by it, she added, impatiently, "Who is Mr. Fletcher, anyway?"

"I don't know," said Mr. Smith, and he added, "I am afraid you are catching cold."

But it was incredulity, not catarrh, which caused Miss Luck to sniff, and she made no further rejoinder.

The fog had thickened, the steam foghorn was beginning to boom over their heads with the groan of a distracted mammoth, but Miss Luck, holding Mr. Smith's arm, continued to tramp the deck. She was rewarded in time for her patience, if Mr. Smith had the right to judge from the tightening grip of her fingers and the thrill of excitement in her tone, as she whispered: "Look as we go by this time; he is holding her hand."

Mr. Smith was a bashful man and a discreet one. To his honor be it said, he did not look. He tried, on the contrary, to restrain his companion from going near them where they sat.

"They will not mind us," said Miss Luck, in a tone of conviction. And she was right to the extent that it was not her presence which caused Mr. Fletcher to straighten himself in his chair, while a slight cloud of impatience crossed his face. A tall, elderly man, wrapped in a thick ulster with the collar turned up round his throat, had come and stood behind them and said in a tentative voice, as if not quite sure of her identity, "Edith," and then in an imperious, impatient tone as she turned her head, "Edith, I have been looking for you everywhere."

"Yes, father," said Miss Hamilton, quietly. She had naturally a quiet, low-pitched voice; when she spoke to her father it seemed almost suppressed.

She said a few words to him as Mr. Fletcher rose and stood by with his self-possessed angular air and a slight look of expectancy.

"My goodness!" said Miss Luck to her friend Miss van Hooten as they settled into their places at dinner half an hour later, "I saw something this afternoon. The 'Solitary Girl' has introduced 'Steely Eyes' to her papa. Look, he's coming in to be her chaperon at dinner. Time he did."

And they both stared eagerly at the tall, gray-haired man who was taking his seat between Mr Fletcher and Miss Hamilton.

"Family freezes to Fletcher," said Miss van Hooten, laconically, as the two men lit cigars together and paced the deck side by side.

It was raw and wet outside that evening, and Miss Hamilton remained below. Next morning the acquaintance between her father and Mr. Fletcher seemed almost a friendship, they talked together so long in the smoking saloon; at least Mr. Fletcher talked and the elder man listened, and all day no one saw Miss Hamilton appear except at meals; no one, that is, but Mr. Smith, who, being, as has been said, a discreet young man, did not mention it. As a matter of fact, he recognized her on deck late in the evening, and would not have noticed her at all had not his attention been so forcibly drawn to her the evening before by Miss Luck. When he saw her and saw that she was talking earnestly to Mr. Fletcher in the shelter of the boat behind which he had himself purposed to take refuge from the driving mist and smoke his pipe, he retreated, feeling half inclined to apologize for his interruption.

"What a curious sort of a chap he is," said Mr. Smith to himself, as he sat in the smoking saloon and puffed at his pipe and blinked at the electric light; "fancy his being in love! I wonder if she really likes him."

Mr. Smith would have had no doubt on that score if he had remained unobserved and listened to her in the place where he came upon them behind the boat, as she stood with her face half buried in Mr. Fletcher's ulster.

"Oh," she was saying again and again, "don't, don't! I am not worthy of you; you do not know me, you do not know what I am."

And Mr. Fletcher smiled and put a sheltering arm round her, and said "Hush!"

But she went on: "It was wrong, I know it was wrong, to let you know me, to let you be with me, but I liked you" ("loved," put in Mr. Fletcher), "loved you from the first and never thought you would ever come to love me. And now I feel I have been so horrible to let you."

"Why, darling, why? What have you done that I should not?"

"Nothing," said the girl, sobbing in his arms, "nothing; it was just that, I did nothing."

"I don't quite understand," he whispered, bending over her, "perhaps I ought not to, perhaps I need not, perhaps though I had better. You shall tell me—tell me now."

"I will," she said, and then, trembling and clutching at his sleeve, "but promise it will make no difference to your love."

And Mr. Fletcher promised. He was not an effusive sort of man; perhaps he was not capable of exhibiting deep feeling, even if he felt it; and perhaps even he could not help feeling that a little more enthusiasm, a little more softness and warmth in his tone, would have consoled her and comforted her and made her almost happy. Anyhow, he bent down and kissed her two or three times with more gentleness than he had hitherto shown.

"Not now," she whispered; "I cannot tell you now. See, they are turning everyone out of the deck saloons. We ought to go below; I cannot stay on deck so late."

"When will you tell me?" he asked.

"To-morrow," and she left him and flitted below, and along the long corridor and into her stateroom, where she had to restrain her sobs, lest they should be noticed by the old French lady who shared it with her. There was little real solitude for the "Solitary Girl" on board the Arcadia, least of all in her cabin, for the old French lady suffered from insomnia, and when she did sleep talked of a deceased husband, or to him, with many ejaculations of "Mon Dieu!" and intermittent snores.

It was late the following morning when Mr. Fletcher saw Miss Hamilton come on deck, and brought his chair and sat beside her.

"What should we have done without my spare chair?" he said; "we should never have been uninterrupted for five minutes together."

"Perhaps it would have been better so," she answered, but her eyes belied her words.

"Why say so?" he asked. "Listen, Edith," (it was the first time he had used her Christian name, and it came out rather loudly with a rush); "you said you had something to tell me, something which I ought to know. I swear to you it shall make no difference, but I think there ought to be no secrets between us. I suppose," he added, looking at her, as if watching the effect of his words, "it is something some relation of yours has done, some ancestor, which you fancy would stop me from marrying you."

THEY PACED THE DECK SIDE BY SIDE.

"I did not know I had said so much," she said. "How quick-witted you are. It makes it so much easier."

He nodded and touched her hand encouragingly.

"You have heard of the London and Wessex Investment Trust Company," she went on.

"I saw something in the papers about their being reported to be in difficulties," he replied, "something about the defalcations of the Secretary. He must have been arrested the day we sailed. I read it in a telegram in an Irish paper some one brought on board at Queenstown."

"Poor man!" she said; "I did not know that."

"Do you know him?" he asked. "Has he anything to do with you?"

"Nothing. He is innocent."

"I beg your pardon," he said, "but I don't quite see what he has to do with us, then. I don't quite understand."

She bent toward him over the arm of her chair, speaking almost in a whisper, "if it were only dark—if I had only told you yesterday with your arms round me," she said. But he made no reply, and she went on, "My father is the Chairman of the company." She paused, and as if he thought himself expected to say something, he put in in his dry, steady tone, "I had a notion the name was Renshaw or some such name."

"Henshawe," she said, correcting him. "We called ourselves Hamilton because the initial was on all our boxes. My father is Mr. Henshawe—you have heard his name in the city—he was reported to have got into difficulties, I don't know how—was he not?"

Mr. Fletcher shrugged his shoulders.

"Is that any reason why I should not marry you?" he asked.

"Mr. Fletcher"——

"Jack," he interpolated.

"Jack," she said, "will you ever let me call you Jack when you know all, I wonder? I wonder, dwelling upon it as I have done, what people would think of it and me. Jack, it is true all the same—my father is the man."

Mr. Fletcher nodded. "He has robbed the company," he said. "I guessed that soon after you began. Is that all?"

"All!" she said, "all! Is not that enough? Do you not turn from me, loathe me, spurn me? No, it is not all; far from it. We are escaping from justice, from penal servitude, but we are going, and I know it, to live in luxury for a time at least in some new home."

"How?"

"We have here with us money, bonds, securities of all sorts, the property of the company, enough to make us rich for life. My father is frightened now, but he is not sorry for what he has done. I cannot betray him, I, his daughter, can I?"

Mr. Fletcher shrugged his square shoulders. "I suppose not," he said, "but I don't quite see his game. He's got the cash, I know, but the bonds can be traced by anyone having the books of the company."

"What are the books?" she asked, and went on answering her own question. "Are they big volumes with clasps and strong bindings—ledgers, account books?"

"Yes," he said, "that kind of thing."

"There is father," she said, glancing aft to where Mr. Henshawe was settling into a seat. "Fancy if he knew what we were talking about, fancy if he knew I had spoken about him as I have to you. He would kill me if he thought I ever dreamed of doing such a thing."

"You are very much afraid of him?"

She shuddered. "I love my father, I suppose I love him, I cannot respect, perhaps I fear him," she said, vaguely. "I loved my mother, but she is dead. Do men always grow tired of their wives when they have been married 20 years and longer and the wife has bad health, and is afraid of them. Shall you hate me in 20 years? Perhaps you do now, or you will if I get to fear you."

"I love you," he said again, just stroking her hand for an instant, looking first to see if anyone was watching them; "can I say more here on deck."

His tone was a trifle colder than his words, but what he had said seemed to satisfy her, and he was under the disadvantage of possessing an unsympathetic voice.

"Then you can still love me?" she said in a low whisper.

He nodded; he was evidently a man who faced problems boldly, and shrank from no revelations.

"What about those books you spoke of?" he said, leading her back to the subject; "when have you seen them?"

"At our house once or twice," she said; "he let me know things sometimes. I had to help him when he fetched them once or twice."

"Oh, he fetched them, did he?" said Mr. Fletcher; "I wonder how he got hold of them?"

"He had duplicates of every key in the office of the company," she said, "and besides the Secretary was ill and away."

"Then I suppose he altered the books," said Mr. Fletcher; "he must be rather clever."

"He could imitate writing so as to deceive the bankers," said Miss Henshawe; "that was how he got the securities and things away from them."

"Do you think they suspected him before he left?"

"I believe he thought some of the Directors thought something was very wrong, and were going into matters; in fact, he knew they were going to employ a detective."

"Eh?" said Mr. Fletcher, "you heard they did that?"

"Father found it out somehow, but of course they may not have begun at once, and we got a good start," she said. "You see I talk of it as we; I half feel I am a thief, and I know that my father is."

She drew her hand across her forehead as if her head ached.

"Does no one know anything of this but you?"

"Father thought Rogers, our old butler, knew of things going on. He saw the books once and came into the room when father was talking to me, but father sent him out to his nephew in Australia."

"He would be a dangerous witness, of course," said Mr. Fletcher, meditatively. "And the Secretary," he continued, after a pause, "did he help your father?"

"He knew nothing; he was ill when father did it," she said. "He told me so. He thought I suspected something, and to get me more in his power by frightening me he showed me everything and gave me some of them to keep for him."

"What sort of things?"

"Signatures he had forged or practiced, the seal of the company which he had copied."

"Phew!" whistled Mr. Fletcher.

"It's terrible for you to hear it," she said; "think what it must be to tell," and, encouraged by his hand, she went on: "I have some of his keys, safe keys, I believe, mixed up with mine, and bonds and bank notes, quite a bundle of them; I am to conceal them going ashore, and if anything is found it will be my fault, and my having them will be enough to convict me as well as father."

"They would not be so harsh as to do that," said Mr. Fletcher. "If they knew he made you—brute," he added, eyeing his future father-in-law, Mr. Henshawe, santering up and down the deck smoking a cigaret.

"You must not say that," she said, "he is very kind to me sometimes, but I dare say he will get on very well without me if I leave him and—and"——

"Marry me and settle out West," said Mr. Fletcher. "That would be all right; we will be married in New York if he will let us—shall I tell him now?"

"Perhaps we had better wait until after we land," she said, "but do you really, really mean it? Will it really make no difference?"

And for the fourth time that morning he assured her of his love and that nothing her father had ever led her into doing would make the slightest difference to it.

"I have plenty in my past, too," he said, "that I must tell you of some day."

"Can't you tell me now?" she said. The idea of his past also not being spotless seemed to create a bond between them and reassure her.

He laughed. "Perhaps it would make me as doubtful of you if I told you yo u seem to be of me. But about these papers—where are they?"

"I have my share in a box," she said, "with all my clothes and things; some are in the lining of my trunk and under a false bottom father had fitted to it, some I shall wear under my clothes, but the Custom House officials are fearfully strict, are they not?"

"Dreadful," he said, "but I think I have a plan. I have crossed before many times and know one of the Custom House officials well; he would do a good deal for me; can't I take your box through as mine?"

"But father," she said.

"Tell your father you said they were dress stuffs you wanted to smuggle and I said I would do the trick for you. By Jove, they are getting ready to signal for a pilot! They must have sighted a sail." And Mr. Fletcher was off to help to get up a sweepstake or a pool to be won by the lucky drawer of the pilot's number. The only social intercourse Mr. Fletcher had had with any of his fellow-passengers besides Miss Henshawe had been over the daily "pool" on the ship's run. Perhaps he did not mind that, as it brought him chiefly in contact with the men in the smoking saloon. He had gained their respect, too, by winning on more than one occasion, which might be luck and might be science. They were "auction pools," a purely American institution, and Mr. Fletcher had shown wonderful judgment in purchasing the numbers which others had drawn. The "sweep" over the pilot's number was an ordinary English lottery, and Miss Hamilton won with a ticket Mr. Fletcher had bought for her; he brought her the money after the pilot had come on board.

"JACK!"

"I spoke to father," she said, "about your offer to take my box ashore; he says it will not do."

Mr. Fletcher looked disappointed.

"Do you know I really think he thought you wanted to steal it?" Mr. Fletcher smiled grimly, and she looked as near being amazed as she had looked for days, but she was very pale and anxious looking when the smile passed away.

"I can see he is getting very frightened," she said, "and so am I. He wants me to separate from him very soon after we land. Oh, Jack, will you take care of me?"

"I'll arrange for everything as soon as I can, dearest," he said, hurriedly; "but what does he mean—what's his game?"

"He says the Directors before we left were putting everything into the hands of a detective, as I told you; not a police detective—a private man, Finacane. Do you know him?"

"I know him—yes, I do," said Mr. Fletcher, frowning; "I know him by name; he will do no good."

"Why not? He is one of the cleverest men in London, father says. He may have found out where we have gone and telegraphed."

"Hang Finacane," said Mr. Fletcher, again; "he's no use; don't be frightened about him."

"I am very frightened," she said. "Father wanted me to find out a very small hotel to go to."

"You had better go to a big one; you are more likely to escape notice," said Mr. Fletcher, and next minute he was singing the praises of the Brevoort House to her father, who looked more grim and saturnine than ever and restlessly chewed the end of his cigar. He was glad, however, in his protestations of gratitude next day for Mr. Fletcher's assistance in passing the customs.

"I see you know the ropes," he said. "Come and see us in a day or two and dine with us if you have nothing better to do," which Mr. Fletcher said he would do; he was going to a humbler hotel himself not far off.

"Not mentioning," as Miss Lorania Luck said to Miss van Hooten as they parted, "that he is going to meet the 'Solitary Girl' on Washington Square this evening at 5; 'nice quiet place, Washington Square,' he says, 'and close by.' That was why he recommended the Brevoort House."

And, sure enough, Mr. Jack Fletcher and Edith Henshawe sat for an hour and a half on a seat in the square and talked. There was much in what they saw to interest her; a negro or a Chinaman shuffling past reminded her that she was in a new world, and that in that world was to be her home. And he seemed to have so much to say though he had only left her a few hours before, and he took as much interest in every little thing and in pointing it out to her as any lover could quite minute details of the new life—a small boy munching a rosy slice of watermelon, a little girl chewing a "gum," and the distant tinkle of a tramway bell or the rumble of a train in the neighboring "elevated" railway all in the baking air of a hot day in New York. And it was hot; it would have been cooler in the hotel, but he would not hear of her returning there and disturbing her father on the first day after his arrival, and it was 6 o'clock when he parted from her on the steps of the big, white hotel.

"How they stare at an English girl!" she thought as she entered the lift and hurried along the corridor to her own room, wondering also where her father was and where he meant to dine.

Then she entered her room and her heart stood still. A few dresses and articles of wearing apparel lay on the bed in confusion; everything else was gone, her dressing bag, her trunks, everything. She needed no one to tell her what had happened.

"Your pa said you were to come and see him if you could, he said so." A very minute boy employed on some duty or other in the big hotel stood at her elbow, piped out his message, and fled before she could question him; but one of the hotel officials in the office down stairs had more to tell her. The New York lawyer who was intrusted with the necessary steps for obtaining her father's extradition to England had left word that such of her things as on further search proved to have no connection with the case would be returned at an early date.

To his office she thought it best to go at once, half dazed as she was, to find out if he could empower her in any way to see her father, and she drove there in a fly—it emptied her purse to pay for it.

And she went alone. If she had only had Jack to be with her and strengthen her with his presence her despair would have been less; but he had never mentioned where he was staying, and if she had waited till he came to meet her in the morning, time would have been lost. And she had always contemplated the possibility of her father being taken, and regarded it with less despair since she knew she had Jack's help to fall back upon. She would return to England and see the last of her father, and then return to Jack.

It was late at the office to which she had been directed, and the lift man had gone home, but she tramped up a long flight of stairs and found a clerk waiting also to go home, but his master was still there engaged with some one; it was too late for him to see anyone else that evening.

"At any rate can you take my name in?"

He nodded rather discouragingly.

"Miss Hamilton," she said; then, correcting herself and reddening as the clerk's interest awakened, "Miss Henshawe."

But there was no need for her to be announced. A door opened beyond the outer office where they stood, and a voice with some slight American intonation said outside in the corridor: "Good night, Mr. Finacane."

She started and stepped forward to intercept the man who had hunted down her father, with some vague idea that he might have powers that others had not—that he would be the man who could tell her the worst that was known.

A tall, square-shouldered man passed the doorway and she gave a slight cry, which made him turn toward her, then she said one word, "Jack!" and the truth was driven home to her brain and she fell fainting at his feet.

She never saw him again. She stood alone on the Cunard wharf when the Arcadia steamed out on her return voyage. She had seen her father taken on board between two men, and she knew he must be there somewhere, but she was thankful not to see him. That night she came back to the same spot—it was the only way to the water side she knew—and in the waters of the Hudson ended the loneliness of the Solitary Girl.—*The English Illustrated Magazine.*

Starch.

We know of one princess in English history who forswore all relations with her laundress until Calais should be retaken. At this the modern lady, with her vast treasures of white in dainty array of bureau drawers, is horrified when she reads. Yet in an age when a prince was mighty indeed who owned as many shirts as the fingers on one hand, or handkerchiefs as numerous as his toes, when the laundry was not among the recognized places of business, and the chief soapmaker, born of Mother Earth, was always named fuller, the Queen's vow loses much of significance. How large the *lingerie* of the Queen that sorrowed over the loss of Calais may have been we do not know, but a laborer's wife of to-day would probably despise it, says William Elliot Griffis, in *Harper's Bazar.*

It was Elizabeth who introduced fashions that established the laundry on a permanent basis, and created starch factories. She not only enlarged the ruff, multiplied undergarments, increased the lady's inventory and the bride's trousseau, but it was she who began the fashion of the farthingale or crinoline. This wheel-shaped arrangement puffed out the dress like a balloon, and right royal was the rustle of the stiffened skirts as the Queen and her ladies moved about. So great was the demand for starch with which to stiffen properly the ruffs, collars, cuffs, and crinoline, that it seriously affected the price of wheat. Complaints were loud and long that bread was being taken out of the mouths of the people. The potato was then unknown, or too much of a novelty. Its virtues and potencies of supply to the laundress and the alleged sugar maker were then unsuspected.

To whom were the English and their doughty Queen Bess indebted for this wonderful addition to the resources of civilization and of personal neatness? It was not their own invention, but the gift of the Low Countries. It came in with carriages, which also were imported, to the amazement of the common folk.

The virgin Queen Bess had sat on the throne six years when, as old Fuller tells us, "Guilliam Boonen, a Dutchman, became the Queen's coachman, and was the first that brought the use of coaches into England." It is added elsewhere "that after a while great ladies (with as great jealousy of the Queen's displeasure) made them coaches, and rid in them up and down the countries, to the great admiration of all beholders." The wife of this Guilliam was the first who starched the Queen's ruffs, which were then substituted for those made of "fine Holland."

Nevertheless, imperious Elizabeth was not long able to queen it over her maids and ladies in the matter of stiffness. Soon she had to content herself with the scepter of England, for, as Stow, in his *Annals*, tells us, the gentlewomen not only matched the Queen's cambric, but even made them ruffs of lawn. "Some very few of the best and most curious wives of that time, observing the neatness and delicacy of the Dutch for whiteness and fine wearing of linen, made them cambric ruffs, and sent them to Mrs. Dinghen to starch. After a while they made them ruffs of lawn, which were at that time a stuff most strange and wonderful. And thereupon rose a general scoff, or byword, that shortly they would make ruffs of a spider's web; and then they began to send their daughters and nearest kinswomen to Mrs. Dinghen to learn how to starch."

Would the reader know who Mrs. Dinghen was—she who first made English ladies so fine and British housemaids so neat? We bless the memory of Mrs. Dinghen every time we are daintily served in an English home. The daughter of a knight of Flanders, and driven out by Spanish oppression, she with her husband found refuge in London. Being probably penniless, she so turned her hand that the pounds soon flowed in. While Mrs. Boonen starched for the Queen, Mrs. Dinghen van den Plasse, as her full name was, taught starching to the ladies. Her price was five pounds for teaching how to starch, but 20 pounds for showing "how to seeth starch." "In a little time she got an estate, being greatly encouraged by gentlewomen and ladies."

She was "the first who taught starching in those days of impurity," adds the historian, with pathos and appreciation of the previous facts. Blessings on Mrs. Dinghen van den Plasse!

Alsace-Lorraine.

Mr. Wolff notes, in his "Country of the Vosges," that there is a cloud over all this land even now, 22 years since happy Germany rescued her lost child from the spoiler.

"The watching gendarme," he says, "is everywhere; the country literally bristles with spiked helmets. There is nothing visible but the conqueror on one side, proud, domineering, exacting unquestioning obedience—and the vanquished on the other, cowed, perforce submissive, but unwilling." Farther on, he adds: "That was not the way in which the French proceeded, the manner by which they knitted Alsatian hearts firmly to themselves. In one important respect—rightly observes Prof. Freeman—France has much less to answer for than other conquering States. A province conquered by France has always been really incorporated into France; no French conquests have ever been kept in the condition of subject dependencies; their inhabitants have at once been admitted to the rights and wrongs, the good and the evil fortunes of Frenchmen, and they have had every career offered by the French monarchy at once opened to them."

So it is that, although the land is ruled by German law, civil and military, though the names of places are German, like the folklore and the old traditions, and though the flavor of the French spoken by the people is unmistakably German, the vital atmosphere of Alsace-Lorraine is French. The stranger among them feels, from the first moment, that he is in France, and, whatever may be his conviction as to the rightfulness of the German cause in the war of 1870, he condemns without reserve the foolish and futile violence which wrested Alsace-Lorraine from the country to which it rightfully belonged. The longer he considers the act the more he is stirred to indignation; hateful in the beginning, it becomes more hateful as time goes on: "E'l modo ancor l' offende." Most of all, it is the manner, the contempt for human right. Those who defend the act bring forward, as a parallel, the annexation of Savoy and Nice by France. Even though the cases were parallel, the one would not excuse the other. There is, however, no real likeness between the two. Napoleon III., with all his faults, was a man of enlightened mind, and he respected public opinion more than any ruler of his time excepting Victor Emmanuel. It was, no doubt, a foregone conclusion that Savoy and Nice should become French; but, in referring to the decision as to their nationality to the people themselves, Napoleon III. displayed his respect for their rights as men and his deference to the opinion of mankind. It is easy to say that he would not have accepted the decision if it had been given against him; and it would be quite as reasonable to add that, if he had been another man, he would not have been Napoleon III.

The facts of history are as they are, and not what they might have been. The people of Savoy and Nice were treated like human beings; the people of Alsace and Lorraine were treated like cattle, and they refuse to be German.—*Frank Leslie's Popular Monthly.*

The Bath in Central Africa.

These Africans are a very hardy race, and I think it is no doubt owing, to a very great extent, to the introduction they receive at a very early age to the strengthening effect of cold-water bathing. Every morning, as soon as they leave their huts, the women file down to the river's edge to give their babies a bath. The mother walks knee-deep into the stream; then catching the half-awakened infant by the wrist, she dips him into the chilly water, and holds him firmly as he wriggles beneath the surface. It always happens that several women are so occupied at the same time, and they naturally engage in conversation, when the discussion is often of so interesting a character that the infant in the water is almost forgotten, till his frantic struggles and tugging warn the dusky parent that he is not amphibious. The child is then hauled out, but before he has time to recover, his violent choking and spluttering are again lost in the depths of the muddy stream. After repeating this operation four or five times, the mother carries the bewildered little piece of ebonized humanity back to the village, and spreads him out on a mat in the sun to gradually recover from the shock. This seems to me to be rather a rough and uncomfortable means of providing for the survival of the fittest.—*Harper's Young People.*

THE AMERICAN FARMER.

"*O fortunatos nimium sua si bona norint agricolas.*"—VIRG.

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MAKE WAY FOR THE BROAD TIRE.

Good roads are fully as important in securing rural prosperity as good laws. Good roads at least will enable one to leave a country whose laws are oppressive. When not too wet nor too dry there is no road so pleasant to travel over as one made of well-graded and smoothed and beaten natural dirt. But such a road can be in such a condition only a short time each year. In Summer the traveler is blinded with dust, in Winter and Spring he is buried in mud. Even when the thaws and rains have ceased such roads remain for a long time a terror to drivers on account of the "chuckholes" with which they are filled.

In general a road built, as Saxe says, "on Adam's plan and not McAdam's," is not much of a success.

It must not be understood from this that dirt roads are uniformly bad the country over. In the arid regions they are possibly good—save the dust—the year round. In New England and the extreme Northern States in general these roads are good nine or 10 months in the year. In Summer and Autumn they are dry, in Winter they are frozen. It is only during the Spring that they become impassable. The worst dirt roads and the longest bad are those in that part of the country where Winter and Spring alternately prevail from November to May. For six months in the year the dirt roads of southern Ohio, Indiana, and Illinois, of Missouri, Kentucky, and Virginia are bad passing all understanding. In these localities scarcely a week in Winter passes without a freeze and thaw, and the climatic conditions are most favorable to the genesis of mud.

But dirt roads even in bad seasons would not be so utterly bad were they not cut to pieces with heavily-loaded, narrow-tired wagons. The narrow tire is common throughout all the regions of the country noted for bad roads. The clay little by little is worked into a matrix ready to be molded into bricks. A wagon should run on the top surface of a road. The narrow tire was evidently intended for the bottom surface, and it generally finds its level. A few days ago on a western Kansas road I met a farmer drawing to the factory an immense load of sorghum. "You must have on at least three tons," I said to him. "I had 6,600, the last load," he replied, "and I've got the wagon to do it every time," he added with pride. And so he had, a new beauty, with tires four inches broad, and just suited to haul such a load out of a plowed field and along a dusty road. Whether on the road or on the farm the broad tire is desirable—especially on the farm. So often the soft ground must be driven over—in the field after fodder or corn, in the forest after wood, along the streams after rocks or gravel—in all these places the broad tire is more than needful. On the farm, therefore, it has every point of superiority over its narrow competitor. On a bad road its merits have already been described. On a good road they are none the less apparent. A good road should be kept good. How often have you seen a good McAdam or gravel road cut into gutters by narrow tires. Drivers are only men, and like other men are prone to follow each other. Soon a rut is formed which does not tend to grow more shallow with use. The broad tire, on the other hand, will tend to keep the surface of the road smooth. It acts more as a roller than as a plow. With them there is little danger of forming ruts, and the roads will remain uniformly smooth and good.

The objections to the broad tire on account of its being heavy and expensive are no longer tenable. Steel is cheaper than iron was a few years ago. Steel of the best quality can now be made for less than a cent and a half a pound. The broad tire can be made of thin steel and will weigh little, if any, more than the thick narrow tire of 10 years ago, and it will last much longer. The felloes may be made only three inches broad for a four inch tire, thus having a narrow rim of metal protecting it on either side. The friction on the ground will be less than with a narrow tire. On the surface the friction of a tire is nil. The part of the tire in contact with the road at its most dependent point is at rest. It is only when the wheel sinks into the road that friction begins. The deeper the penetration the greater the friction. Whenever the surface of the road is a little soft either from dust or mud the traction of a broad-tired wagon will be less for equal weights than for the narrow.

This is an era of broad gage agriculture. The farmer has broader ideas and broader aims than he has ever had before. His field of activity is broader. He no longer works with his hands alone, but also with his head. He mixes brains with his business. He has a broader influence in the State and a broader margin of legislation in his favor. He is entitled to a broader tire on his wagon.

THERE is one branch of farming that yields big returns, and is never likely to be overdone. This is the raising of fine cigar wrappers. Every year the demand for these grows far faster than our increase in population, for the reason that we are becoming more and more of a cigar-smoking people. Europeans are advancing in the same direction. The pipe is giving way to the cigar and the cigaret, and while the production of filler-tobacco keeps some sort of pace with the demand, that of wrapper leaf falls far behind it. This year the production in Sumatra and Cuba has been very short, and the price has everywhere advanced. There ought to be somewhere in our wide area a combination of soil, climate, and methods of culture which will produce the best quality of wrappers in large quantities. Such a thing would be much more lucrative to the producers than a gold mine. The tobacco growers of the Connecticut Valley are moving in the right direction in the establishment of an experiment station which will develop some method of improving the quality and increasing the production of good wrappers. The Pennsylvania growers are also discussing the same thing, and there is hope that something will be accomplished which will put into the pockets of our own farmers the vast amounts which we send out of the country every year for this kind of tobacco. Meanwhile, let the man who can raise good wrappers do what he can to increase his production. There is more steady profit for him in that direction than in almost any other that could be mentioned.

Get up a Club for THE AMERICAN FARMER.

THE ROAD TO WEALTH.

The farmers of the Eastern and Southern portions of the country are face to face with the cold, stern fact that the only way in which wheat raising can be made to pay is by having a large acreage, which will allow the use of labor-saving machinery; also, in having a larger yield to the acre. No matter how cheap farm labor may be procured in Virginia and in the Carolinas, it will not pay to raise small fields, cultivating them and harvesting them mainly by hand and raising only an average of nine bushels to the acre in Virginia and six in the Carolinas, where Kansas, Montana, and Washington, using labor-saving machinery wherever possible, average from 18 to 22 bushels to the acre. The same discrepancy is observable in the production of oats. In Virginia the average is only 12 bushels to the acre, and in the Carolinas 11, while in Montana the average this year was 32 bushels, and in Washington, 38 bushels. Railroads have lost the farmers on the seaboard the advantages in the grain market they formerly enjoyed of nearness to market.

It will not do to say that the soil on the seaboard is worn out. It has been under cultivation for less than two centuries, while that of England, which has been tilled for nearly 1,000 years, produces from 25 to 30 bushels of wheat to the acre. Intense cultivation is the only course for the farmers east of the Alleganies. Whether they go into grain or other products they must make every acre produce several times as much as the present average, or have no profit on their labor. High production means prosperity; continuation of the present wasteful methods, poverty and disaster.

ARIZONA begins to calculate on the time when she will be represented by a star on the flag. An irrigation system is almost ready which will make fertile farms out of 1,000,000 acres of arid desert. Last year Arizona mines produced $3,000,000 worth of gold, $2,200,000 of silver, and $4,500,000 of copper.

MORTIMER WHITEHEAD writes regularly for each issue of THE AMERICAN FARMER. Subscribe for an agricultural paper right from Washington, D. C., and get all the doings of Congress and the work of the different Departments of the Government in the interest of agriculture. Keep up with the times and get the news direct and while it is fresh.

VALUE OF CORN FODDER.

Prof. W. A. Henry, of the Wisconsin Agricultural Experiment Station, has been going carefully over the results obtained in the analyses of the product of one acre of corn by the Experiment Stations of four States. This product was as follows:

	Ears, lbs.	*Stover, lbs.
New Jersey.....	4,774	4,041
Connecticut.....	4,216	4,360
Wisconsin.....	4,941	4,490
Pennsylvania.....	3,727	2,460
Average.....	4,415	3,838

*"Stover" means the stalks from which the ears have been husked.

The analyses showed the following percentage of digestible matter in the above products:

	Ears, lbs.	Stover, lbs.	Total crop, lbs.
Protein.....	244	83	327
Carbo hydrates	2,301	1,473	3,774
Fat.....	125	22	147
Total.....	2,670	1,578	4,248

From this Prof. Henry reasons as follows:

This table shows that the total digestible matter in the average crop of the three stations last named was, 4,248 pounds, of which 2 670 pounds are in the ears, and 1,578 in the stover. Figured percentagely there are 37 per cent. of the total digestible matter of the corn crop in the stalks from which the ears have been husked—the stover.

Let us next compare this yield of 4,248 pounds of digestible matter from our acre of corn with that of a good hay crop of, say, three tons. Dr. Armsby figures the digestible matter of the hay crop as follows:

	Dry matter, lbs.	Digestible matter, lbs.
Three tons clover hay..	5,244	2,754
Three tons timothy hay	5,336	2,838

This shows that while the digestible matter in a hay crop of three tons is about 2,800 pounds, that from an acre of corn is about 4,200 pounds, a large difference in favor of the corn crop—provided, however, that the fodder is saved. There are many meadows which do not yield three tons of hay to the acre; indeed, a ton and a half would be a fair yield. This ton and a half of hay would have less digestible matter in it than the acre of stover as found by Dr. Armsby. The farmer, then, who wastes the stalks from a good acre of corn throws away more feeding value than does he who lets an acre of common, or rather poor, meadow go without cutting.

THE newspapers are not all-powerful in this country by any means. There is nothing that they have jumped on so incessantly as the cigaret, and yet there is nothing, except beer, which is getting such a hold upon the country. The cigaret makers vie with the brewers in extending their factories and increasing their output. The brewing of beer increases at the rate of 12,000,000 kegs a year. In 1889 there were 2,413,349,811 cigarets manufactured in the United States, and in 1890 2,505,167,610, showing an increase of 91,817,799 in one year. The increase since then has been in still greater proportion. The Legislatures of various States have passed laws intended to restrain the consumption of cigarets, but these have become dead letters.

The Indiana Legislature has wrestled with a bill for several sessions which prohibits the manufacture and sale of cigarets in the State. If it comes up again this Winter it will be defeated by a decisive vote. Whether for good or ill, the cigaret has come to stay.

OWING to the fact that the area of farming land is limited, but the number of farmers only limited by the possibilities of making a living, the English farmer has a tough time of it from an American point of view. He never owns his land—he must rent it from one of the 60,000 aristocrats who own all the fields in the Kingdom. He pays on an average about $7 an acre rent, and besides this must pay all the taxes—"poor rates," "water rates," "school rates," and "County rates." If he keeps a gun he must pay a yearly tax. If he goes a-fishing he must pay for it. He must pay a tax on every vehicle on the farm, and the tax on four-wheelers is much higher than on two-wheelers; so he uses carts as much as possible. He must pay a tax on every dog he keeps—which is a mitigated infliction, as sheep-killing dogs seem to be a rarity in England. If the farmer ever uses one of his vehicles to convey another person—even his wife—he must pay an annual tax of $3.75. So it goes throughout—taxes on everything that he does or ought to do. Such is the farmer's condition under boasted free trade.

FROM reports it is given that the present season has been a very bad one for the British agriculturist. Wheat is very short, and to add to this the markets for other products are very low. This will prove another outlet for the farm productions of our country.

PERSONAL.

Col. C. J. Murphy, Secretary Rusk's special "corn agent," reports that a new Indian cornmeal mill will be opened in Berlin this month which will grind American corn exclusively with the latest improved American machinery. This is the second mill erected in Germany for the exclusive making of cornmeal, and the one which was first put in operation has been unable to fill its orders even by running night and day. Col. Murphy expects to introduce cornmeal into every part of "der Faderland" by giving away large quantities as samples. A large bakery also will be erected in Berlin which will bake only "johnny-cake." Col. Murphy is informed that the forthcoming report of the German Government Commission appointed to investigate the merits of Indian corn will be highly favorable to the use of corn as human food.

Samuel J. Tilden, nephew of the celebrated Democratic Statesman, has just visited Eureka Place, the "Home of the Shropshires," owned by Messrs. J. S. and W. G. Crosby, of Greenville, Mich., and purchased two carloads of Shropshire ewes and two fancy rams of the same breeding. This is probably the largest sale ever made in Michigan to a single breeder by Michigan breeders. Mr. Tilden visited Eureka Place in person, making his selections and taking his attendant to go forward with the sheep. The number purchased was 122 head, and filled two cars.

BUREAU OF INFORMATION.

E. M. P., Caldwell, Mich.—Under the naturalization laws, previous residence in the United States for five successive years, and residence in the State for one year, are required before an alien can be naturalized as a citizen of the United States. Two years before naturalization he must declare under oath or affirmation that he intends to become a citizen, and he must renounce all allegiance to any foreign sovereign or Government. Some of the States confer the right of suffrage upon aliens who have simply declared their intention or "taken out their first papers." In some states a residence of only three years is required; in other States at least five years

T. S., Jolly, S. D.—The present strength of the United States Navy is thus given in the report of the Secretary of the Navy in December, 1891: Of armored battleships, first-rate, five in process of building; also one first and one second-rate armored cruisers. Of steel cruisers we have: First-rate, five in commission and two in process of building; second-rate, three in commission and five building; third-rate, three in commission and two building; fourth-rate, one completed and one not yet finished. Of coast defense ships six were in process of construction, and there is also one torpedo boat and one dynamite cruiser complete.

H. Jarrett, Lakeside, Fla.—In 1887 there was a large surplus in the Treasury. Mr. Cleveland, not being authorized by the laws to make any other direct disposition of it, used it largely for deposit in National banks. The Congress of 1887, '88, however, enacted a provision instructing the Secretary of the Treasury to use it in buying bonds that were not yet matured. Of course, a premium had to be paid for them. The Republican party in their platform of 1888 declared in favor of using the surplus in this way. The amount of money paid for premiums during four years is as follows: 1888, $8,270,842.46; 1889, $17,292,362.65; 1890, $20,304,224.06; 1891, $10, 401,220.61.

J. W. S., Pomona, Tenn.—What is known as the desert land act provides that desert lands can only be taken in California, Oregon, Nevada, Washington, Idaho, Montana, the Dakotas, Wyoming, Utah, Arizona, and New Mexico. Also in proving a claim under this act it must be shown that the land is so arid that it cannot be tilled without artificial irrigation.

Peter S. Gilliban, Tolono, Ill.—The following are recommended by technical journals as first-class cements for the purposes you mention:

Cement of Pompeii, or Universal Cement.—Dissolve eight ounces of sugar in 24 ounces of water in a glass flask on a water bath, and to the thin sirup add two ounces of slaked lime, keep the mixture at a temperature of about 70–75° C. for three days, shaking frequently, then cool, and decant the clear liquor. Dilute six and a half ounces of this liquor with as much water, and in the mixture steep 16 ounces of fine gelatine for three hours after heating to effect solution. Finally add to the mixture one and a half ounces of glacial acetic acid and 15 grains of pure carbolic acid.

Diamond Cement.—Fine gelatine, five ounces; water, four ounces; glacial acetic acid, one ounce. Let these stand together for several house, then heat to effect solution, and add 10 grains of carbolic acid to preserve the cement.

Liquid Glue (Sydetikon).—For this use four parts of the above-mentioned saccharated solution of lime, and dissolve six parts of glue or gelatine in it as there directed. Then neutralize the lime with a third part of oxalic acid, and add carbolic ocid, in the above-mentioned proportion, as a preservative.

Cement for Porcelain.—Twenty parts of white lead and 12 parts of pipeclay, carefully dried, are incorporated with 10 parts of boiled linseed oil, heated on a water bath. The cemented articles are dried slowly in a warm place.

Enjoy Reading It.

I enjoy reading THE AMERICAN FARMER, and find much useful and entertaining matter in it.—L. L. FREEMAN, Winfield, L. I.

NEW PUBLICATIONS.

HOLSTEIN-FRIESIAN HERD BOOK, VOL. X. Thos. B. Wales, editor. Published by the Holstein-Friesian Association, Boston, Mass. Price $2.75. Sent postpaid on receipt of price.

Vol. X of this standard book is an admirable production in every way, and reflects much credit upon Secretary Wales. It contains 870 large pages, of fine, heavy paper and excellent press work, and is strongly bound in cloth.

The book contains the list of officers and members of the Holstein-Friesian Association of America, the charter of incorporation of the association, and its by-laws, the report of the seventh annual meeting of the association at Murray Hill Hotel, New York, March 16, 1892; reports of various meetings of the Board of Officers, and the members, names and descriptions of 6,221 animals which had been registered during the year. The number recorded during the year was 1,072 less than the previous year—438 bulls and 634 cows. The Treasurer's report shows that there was $17,837,04 in cash on hand at beginning of year, and the receipts were $4,036.58, making a total of $21,873.62. The expenditures were $8,384.80, leaving a balance on hand of $13,488.82. The Secretary's office received $18,729.27 and disbursed $16,349.38. Of the latter $9,370 was for bounties on slaughtered or castrated bulls.

The book is admirably gotten up, and full of interest to all stockmen.

Publications of the U. S. Department of Agriculture for October:

Statistical Report No. 99. Report of the Statistician, September and October, 1892. Contents: Farm Prices in Two Centuries; Report of Ramie Machine Trials in New Orleans; Indian Wheat Crop of 1892; Notes of Domestic and Foreign Trade and Industry; European Crop Report for September; Freight Rates of Transportation Companies.

Report of the Condition of Crops and Yield of Grain per acre, October, 1892.

Synopsis of the October Crop Report. (Issued in advance of the regular monthly crop report from which it is condensed.)

Experiment Station Record, Vol. 4, No. 1.

Monthly Weather Review for July and for August. (A summary of weather conditions observed throughout the United States.)

Spanish edition of Report on the Use of Maize in Europe.

One of the most notable publications of the year is the illustrated edition of George William Curtis's *Prue and I*, which Harper & Brothers have ready for immediate issue. The story itself was first published more than a quarter of a century ago, and has long been recognized as an American classic. It is now issued in a form befitting its unrivalled literary excellence. The new edition contains 100 illustrations, from drawings by Albert E. Sterner. The introductions is a fac-simile reproduction of Mr. Curtis's manuscript, and the printing and binding are all that could be desired. A limited *edition de luxe* of the work is also published, bound in vellum and containing an etched frontispiece by Mr. Sterner.

The Microscope is a monthly journal which should be in the hands of everyone who studies matter and animal life with a lens. It is edited by Chas. W. Smiley, A. M., and published at Washington, D. C. Price $1 a year.

Just the Paper He Likes.

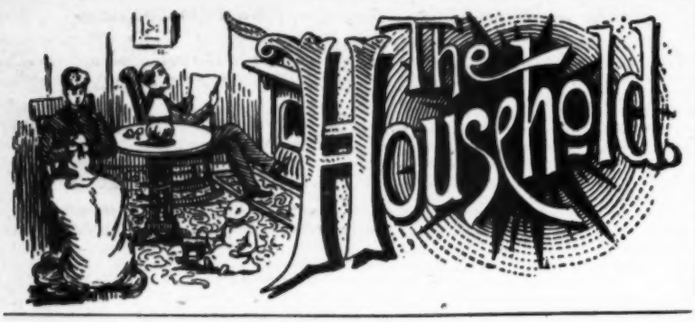
THE AMERICAN FARMER is just the paper I like.—L. H. YOUNG, Little River, Kan.

SAMPLE COPIES.

We shall be glad to send sample copies of THE AMERICAN FARMER to any address that may be furnished. Those who wish to see the paper, or who want their friends to see it, will confer a favor on us by sending in requests for specimen copies, to be sent to any address they furnish.

Address all communications to

THE AMERICAN FARMER,
Washington, D. C.



Harvest Time.

JAY EM BEE.

The time of harvest once again is here,
The ripened corn stands tent-like on the plain,
While barns and granaries open wide their doors
To welcome in the products of the main.

The hunter roams with stealthy tread the wood
Where leaves with tints of gold and brown and red
Lie thickly in his pathway, clog the brooks,
Or rustle on the trees above his head.

The orchards cast their fruit with generous hand;
Kind-hearted neighbors pass from door to door
With words like these, "How yields the land
To you, my friend, how rich your store?"

The hearthstone glows indeed, while fires burn bright;
The housewife sits at ease, her day's work done,
Thinking of children near, close tucked for night,
And feels how sweet the shelter of this God-blest home.

When all is garnered in, what sweet content!
With books and friends the hours pass swiftly by,
No fear of hunger, cold, or garments rent,
With store so great, with harvest pile so high.

By the Editor's Fireside.

ONE OF the curiosities of traveling is the different way in which people conduct themselves under the various conditions arising. Sit down in a waiting-room awhile and watch the incomers and outgoers. Individual traits of character will show themselves there in the most decided manner. Of course, there is always a difference between those who are accustomed to wandering and the home-stayers who regard the outside world from their quiet firesides as a wilderness full of ravening wolves seeking whom they may devour; but even these people differ widely in their ways.

The man or woman who is always in a hurry comes dashing into the room with a wild sort of questioning look in the eyes, and is not satisfied until the assurance of the official has been given that there is time enough before the train starts to make all necessary preparations. Then, if there is a little waiting to be done, how he wanders to and fro, looking at the clock at each turn, and going to the door every alternate minute to assure himself that he is not left. Not long ago I watched a man of this kind with much inward amusement. The shoe leather that he wasted in making certain that the train was not intending to play him false by starting out when his back was turned was, by no means, inconsiderable. It is not always a woman, I thought to myself, who is nervous and makes a fool of herself, for here is a great big stout man as fussy and agitated over possibilities as any feminine I ever saw under similar circumstances.

While he wandered like a perturbed spirit around, another man entered of an entirely different stripe. The latter had just one minute and a half in which to purchase his ticket and get on board the train, but there was no indication of haste in his movements. He walked calmly to the office, laid down his money, counted over his change, pocketed his ticket, and passed out of the door trainward. Did he get aboard? Yes, just as the train moved away, for I had curiosity enough to go to the window and see. Moral: The person who never becomes flurried is quite as likely to "get there" as the one who makes flying footsteps in his fear of being left behind.

The funniest thing of all, though, is when a husband and wife possess these opposite characteristics, and start out upon a journey. The hurrying one mentally carries the deliberate partner of his joys and sorrows upon his shoulders, while bodily there is a continual nagging and dogging from first to last, until they are at home again. It is hard lines for both—as hard for one as the other.

* * *

IN TRAVELING, there is one rule which will carry the most experienced safely everywhere. That is, keep cool. Never allow yourself to lose self-control. Look any difficulty calmly in the face, and the best way out of it will appear. In these days when everything is done for the convenience of the public there is always someone whose duty it is to look after those who find themselves in doubt or perplexity. Such officials are usually uniformed or can be distinguished without trouble, if one does not get blinded by anxiety. I repeat it—the thing is to "keep cool." It is a good rule to follow under all circumstances, but especially in traveling.

* * *

A GREAT many people are troubled to sleep well after the first days of vigorous youth have passed way. It is exceedingly difficult to assign a reason for this many times, because there seems to be none. Of course, housekeepers and those persons who are obliged to use both body and brain to the utmost, often tax themselves beyond what they are able to endure, and the result is sleeplessness. There is really nothing which is not absolute pain which is harder to endure than to lie awake hour after hour with every sense alert and without the slightest feeling that sleep may come before morning. Through the mind rushes all sorts of things, referring both to the past and the present. Curiously enough it is usually the most unpleasant happenings that come most vividly to the surface then. I suppose it only goes to show the tendency of the human being to dwell upon what is unpleasant and let it outweigh the manifold good things which are scattered all through the years.

Sleeping is really largely a matter of habit, or the result of some habit. For instance, one individual will find it absolutely impossible to sleep if she has eaten nothing before retiring, while another is equally wakeful if something is taken into the stomach at that time. Usually, however, if the truth were known, there is a tendency of blood to the brain caused by worry of some kind, and, almost invariably, if any means can be employed to draw it away, sleep will come. Many times the same result may be obtained by rising and thoroughly rubbing the body from head to foot with a dry towel until there is a glow upon the surface. Of course, a hot bath is often recommended before retiring for the purpose of inducing sleep, but whether this is a good thing or not depends upon the condition of the individual. I do not believe in taking anesthetics of any kind in ordinary cases of insomnia. A strong will power will do more than a dose of drugs. At least some of these simple remedies used persistently will not be harmful while bringing about the desired effect.

Everybody should remember one thing, and that is that when the hour for sleep comes an effort should be made to absolutely dismiss from the thought any subject of anxiety. Of course, many will say that this is impossible, but it is far more under the control of the individual than is usually believed. In fact, we are to a large extent masters of our own bodies if only we could realize the fact. We invite all sorts of evils by dwelling upon them and by fearing their coming. Fear is one of the most prolific causes of physical ills. Fearing a thing puts the body into a negative condition which renders it peculiarly susceptible to any influences for ill that may be near. In the season of an epidemic a large proportion of those who are seized have feared its approach. Fear weakens the will power and unnerves the system. Present a positive front to the foe and he will not approach.

To return to sleeplessness, remember that this same law applies to this disorder of the body. As I said before, anxiety and fear of any evil takes away the power of resistance from the body, and the absence of a positive condition is shown by the inability to obtain the rest which is necessary.

FOR HOUSEKEEPERS.

A Few Suggestions by One Who Knows.

A very great mistake, as I have said before, is often made by having the kitchen the least attractive place in the house. This should not be so if possible to prevent it. It should have sunlight and thorough ventilation, and should be large enough to be convenient. Screen doors should be provided and the windows screened all over in order that the room may be kept light and yet free from flies, for the light, as every housekeeper or cook knows, is an absolute necessity while the cooking is going on. A very good substitute for the dark closet, which is usually considered a necessity in the kitchen for putting away the pots and kettles, is a long, broad shelf just below the sink, and hooks in convenient places for the hanging of much of the kitchen paraphernalia. Why I would banish them is that they are apt to be used as a stowaway for many things and to lack the convenience that should be a characteristic of this room. If the kitchen is papered, enameled cloth that can be cleaned easily should be placed wherever there is danger of the water spattering and thus spoiling the paper.

A most convenient article is a small table on castors with a movable zinc-lined tray on the top and a shelf half way below. This will save many steps and therefore much strength. When cooking, articles that will be needed can be placed on it and then rolled to the fire, standing there so long as needed. When washing dishes they can be piled on it and taken to the pantry or closet and put away at once, saving the running to and fro.

Another excellent thing for the kitchen is a table fastened to the side wall with hinges, that can be raised or lowered at will. When not needed it can lie close to the wall out of the way. Any carpenter can put this up at small expense. It should be made of hard wood, with a smooth top and held in place when open with swinging brackets.

What is needed always is an abundance of shelves around the room, and

also plenty of hooks to hang up the various articles that are in almost constant use.

* * *

Matting is used so extensively nowdays that it is well to know how it may be easily cleaned. Wash the dirty spots first with water and corn meal; then rub it off with salt and cold water, using a pint of salt to a gallon of water, and taking a flannel cloth instead of the brush for the purpose. Of course, the latter would be likely to break the matting. If the matting is white and it turns to a bad color, wash it all over with a weak solution of soda and this will turn it uniformly of a pale yellow. Carpets will be made to look very bright by going over them with a flannel cloth wrung out of warm water and ammonia, using a tablespoonful of the latter to an ordinary pail of water. If ink is spilled on the carpet, cover it immediately with blotting paper and leave it until the ink is absorbed. If there are grease spots, cover them with flour or dry corn meal and pin paper over the whole. Repeat the process every few hours until the grease is drawn out, brushing the old flour off each time.

Another way to clean the carpet is to shake it well, then wipe it over with a flannel cloth dipped in high-proof kerosene oil and hang out. If this is used, however, no matches or fire should be allowed in the room for 48 hours afterward, but the air be allowed to pass freely through it in order to let the kerosene entirely evaporate.

* * *

A thing which is very good for housekeepers to remember is that alum is said to have power to purify water more than almost anything else which can be used. Most people know that muddy water can be cleared by alum, but that it will rid it of what is called bacteria, or the quality which renders it detrimental to health, as physicians say, has only recently been discovered. Putting one-half grain to a gallon will answer the purpose. When there is a doubt about the purity of the water, this is a very easy thing to do; so easy that it matters little whether it is a necessity or not. It is a safer thing always to take precaution about the water that is used in the family, unless the source from which it is obtained is known to be absolutely pure. Another excellent thing is to boil all the water that is to be drunk by the family. After boiling it can be set away in a cool place and used with ice, or if that is not obtainable in the country, hang it in the cool waters of the well or cistern.

* * *

Doubtless many housekeepers would be shocked at the idea of putting a duster in the sitting room or parlor, but one will be found very convenient there, saving steps many times when steps count much in the strength the housekeeper has to spare. A pretty duster bag may be made which will be ornamental and serve to conceal the useful article. Take a palm leaf fan, gild the handle and a short distance below it. Have a bright piece of India silk or silkalene and gather a pretty bag upon the fan, leaving across the top a ruffle of the goods above the shirring in which a rubber is to be drawn to hold the bag close to the fan. Fasten a narrow ribbon to the top to hang it up by, and put a bow of broader ribbon upon the front of the bag. In this the duster will be concealed, and no one be the wiser for its presence. A bag may also be made like the sachets that are hung in various places about the room. Between the lining and the outside of the bag may be put a thin layer of cotton upon which sachet powder has been sprinkled; then in the bag the soft cheesecloth duster nicely folded can be placed ready for use, while the innocent-looking sachet bag holding it can have a place anywhere in the room which it would have occupied if used for simply ornamental purposes.

* * *

A pretty present to be given to a mother for her baby is a band made to tie the little boy or girl in the chair or carriage when to be left alone or taken out for an airing. Get a piece of heavy white satin ribbon three inches wide and 14 inches long. Embroider this with scattered flowers in silks the colors of the blossoms; have a lining of one of the colors used in the embroidery; buttonhole the edges together or stitch them and then put a fancy stitch with silk over the seam. Make rosets of narrow white ribbon and put on each end and fasten also under the roset two pieces of ribbon each about one-half yard long, by which the band may be tied to the chair or carriage.

* * *

Feather beds have passed almost entirely out of use except in some country places, where they are yet considered a necessity. They are not, however; far from it. A good hard mattress is to be infinitely preferred to the finest feather bed that can be found. But a very good use may be made of them by those to whom they have descended from the past. Place them over the springs and under the mattress. The effect is to make a bed soft, springy, and absolutely luxurious. Another way in which these feather beds may be made a joy is to have them tied precisely as the hair mattresses are tied. The result is said to be something that will surprise every housekeeper—the softest kind of mattress.

WORK FOR BUSY FINGERS.

Suggestions for the Coming Holidays.

PHOTOGRAPH SCREEN.

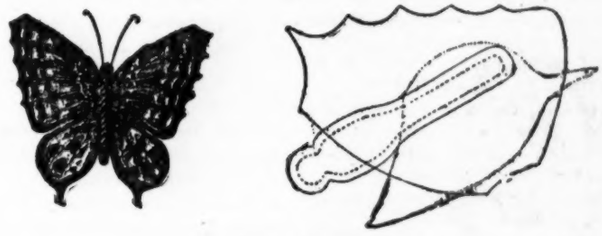
Take three envelopes of the same size, and either of the same or prettily contrasting tints. In the center of each with a pencil draw an oblong exactly the size of the part of the photograph which you desire to have exposed. Cut the oblong out of each of the envelopes, or, instead of cutting out the oblong, connect the opposite corners with light, straight lines, and over these straight lines draw ragged lines with a knife or pair of scissors. Then follow these ragged lines with a pin or the points of the scissors so that the paper is severed in those places, and turn back the points, leaving the opening as before. Then either paint a design of small flowers, or of the clover leaf, upon the surface exposed, and tie the long edges together by passing ribbons through after the photographs have been slipped in place and let it stand upon the lower edges. If anyone chooses, she may use the gold paint in any pretty way to ornament the screen which is thus made. As will be readily seen it can be folded and made to occupy a much smaller space if desired.

PAPER OR PICTURE HOLDER.

Buy an ordinary kitchen broiler and gild it all over carefully. Take two strips of some pretty color of plain India silk a little longer and a little wider than the broiler. Shir the top of each one, and one inch below the edge leave a narrow ruffle. Gather the other edge in the same way and sew each one neatly into the broiler, leaving the ruffles to show just above the edge. The handles may be turned downward to form supports to the holder. This makes really a very pretty ornament at small expense of time or money. A pretty addition is to tie a bow of bright ribbon upon each one of the handles, midway between the top of the broiler and the table or stand upon which it is standing.

BUTTERFLY LAMP SCREEN.

Four sections of white bolting cloth are cut for the wings of the size of the working diagram. Around the edges of the wings a very thin paper-covered wire is put, being kept in place by lightly pasting to the cloth. The edges of all the wings on both sides are decorated with gold paint. The heavy shading around the body is put on in a medium brown Paris tint, and the spots are made in the brown shades running up to yellow. The body is of cotton batting rolled tightly; it is tied with thread about the neck and about the body to make the shape. It is then tinted dark brown, the stripes being light yellow. Its eyes are also yellow



BUTTERFLY LAMP SCREEN.

with a dot of brown in the center of each. A thread of yellow silk to represent a feeler is drawn through the cotton just below each eye with a needle, and the ends are curled over the dull edge of the scissors. Wires are fastened to the under side of the body and bent into hoops to catch on the lamp chimney. The wire must be made long enough so the butterfly will not scorch. The butterfly can also be made by using a smooth, round clothespin for the body. Dip in black ink and make the stripes with red ink. Cut the wings of white crinoline and cover with the glazed layer of cotton that comes off of sheet wadding. Decorate the wings with the two colored inks, using a small brush or pen.

For the Home Table.

CARROT PUDDING.

One coffee cup of grated carrot, one coffee cup of sugar, two coffee cups of flour, one of chopped suet, one-half pound of raisins, three eggs, two teaspoons of baking powder, one teaspoon of salt. Steam three hours. Eat with either hard or liquid sauce.

APPLE SNOW.

Peel and grate one large sour apple, sprinkling over it a teacupful of powdered sugar as you grate it to keep it from turning dark. Break into this the whites of two eggs and beat it constantly for one-half hour. Heap this in a glass dish and pour a custard around it.

STRAWBERRY SHERBET.

Two quarts of berries, one pint of sugar, one and one-half pints of water, one tablespoonful of gelatine. Mash berries and sugar together and let stand two hours. Soak gelatine in cold water for half an hour. Add one pint of water to the berries and strain. Dissolve the gelatine in the one-half pint of boiling water. Add this to the strained mixture and freeze.

SALMON CROQUETS.

One pound of salmon, one teaspoonful of salt, one tablespoonful of chopped parsley, juice of one-half of a lemon, a little cayenne pepper, one cup of cream, one tablespoon of butter, two tablespoons of flour. Chop salmon and add salt, parsley, lemon, and pepper. Rub butter and flour together and put in boiling cream; boil thick and add to salmon. Make into balls and roll in egg and cracker dust and fry in boiling lard.

SHEEP AND WOOL.

Shearings.

The difference in shepherds often makes all the difference between a sheep that pays well and one that does not.

The sheep yard can be dry and clean without putting it on a steep hillside where the rains will wash it off into the creek.

No ram, however good, should be kept in the flock over two years unless for exceptional qualities and in judicious hands.

Luck in sheep raising is a myth; no wise man will take any stock in it. It is the subterfuge for carelessness, ignorance, and failure.

Experiments are often costly to sheep raisers. They are profitable, however, if they do not cost too much. Try them, easy like, to begin with.

Perhaps you had better put some money into better arrangements for keeping the flock than in buying high-priced sheep. It may pay you better.

Just why the genial climate of Texas and all the Gulf Coast regions are not turned to good account by wool growers continues to excite astonishment.

Use rams that are reasonably matured. A well-bred young ram is an experiment worth trying, but it is unsafe to risk everything on such uncertanties.

The sheep comes to time in settling its bills more promptly than any other farm animal. It only wants six months' time, and then declares a dividend.

Sheep enjoy white clover in the pastures, and the analysis shows it is rich in lime and mineral matter that is favorable to health, good mutton, and strong wool.

There is nothing the matter with sheep manure, but it will not do any good on the road or on somebody else's land or down the hollow, as much of it is allowed to go.

The experimental farms are not doing as much for sheep breeding and breeding for mutton and wool as they might do. Can they not do sheep raising a special kindness along these lines?

The wool clip of the United States in 1891 was 310,000,000 pounds; of Great Britain, 140,000,000; Australasia, 600,000,000; Cape of Good Hope, 100,000,000; Argentine Republic, 330,000,000.

The silo promises to be the short cut to successful mutton and wool growing in this country. Turnips solved the sheep question 150 years ago in England. The indications are that ensilage can do this for us.

Many a man has about concluded he can raise as good sheep as anybody, and that all he has to do is to pay long prices and turn them out with the old flock to rustle for a living. It is mystery to some men how good sheep are made.

Don't get into the idea that a field of rag weeds is a proper sheep pasture. Soft, clean, elastic, strong wools are not grown on such coarse foods. Such pastures will do for a change, and not for the entire dependence. You can beat such pastures easily enough.

Unless sheep are to be made a specialty on the farm and no other varieties of stock kept, they should have yards and pastures to themselves. Colts, mules, and cattle are liable to horn them or run them down. An old sow was never intended to live among sheep.

Mr. R. C. Garrett, of Essex County, Va., had three very fine Southdown lambs killed by dogs last week. The two dogs belonged to a negro that is so trifling and poor that he can hardly keep his miserable soul and body together. Mr. G. writes: "I killed one of the dogs, and am going to kill the other as soon as I can find it."

A. Herald, Lacy, Choctaw Co., Mont., writes: "This is a good sheep country; pure air, pure water, plenty of good grass; all kinds of stock fat as butter. Mutton sheep are selling for $3.50 per head. I am herding 3,200 sheep; have a tent, cook my own meals, and follow the sheep all day. I do not see a human being but once a week."

We may learn something from the Bible accounts given on the subject of lambs for food. The lamb was esteemed an especial dainty in patriarchal times and the kind of people who used such tender viands. The prophet Amos speaks of those "who lie upon beds of ivory and stretch themselves upon their couches, and eat the lambs of the flock and the calves out of the midst of the stall." Samson sent a present to his father-in-law, and Jesse, when he brought his son David to Saul, made him a bearer of some bread, a bottle of wine, and a lamb.

The farmers of Scotland have trouble with dogs worrying their sheep, the same as farmers in Virginia and elsewhere. Those farmers have a practice of shooting dogs caught in the act; but otherwise are liable for damages to dog owners. To an outsider it seems rather high-handed to shoot another man's dog, but if he would put himself in the farmer's place he would not be so severe in his criticisms. There are very few men who could endure the provocation of having their property worried and killed without taking vengence upon the cowardly, prowling, trifling dogs of his neighbors if he suspected them of the deed.

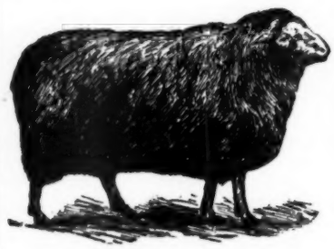
Fat mutton once had a wider range of admirers in England than at pesent. The fatted animals were the best. A dish of potatoes was placed in the common oven, and over it the fat loin of a Leicester sheep. This made a great mass of gravy. The master of the house dined off the meat, while his family equally fared on the delicious and saturated potatoes. But at the present time luxury has almost banished the fat Leicester mutton from the tables of the manufacturing operative, and is more confined to those engaged in the mining districts. The Southdown and the Highland Scot, the Cheviot, and the half-bred (small in joint and full of flavor, with less fat) seem to be the kind of sheep which the spread of luxury and epicurianism demands in the manufacturing districts of the country, and therefore the present tendencies of breeders must be somewhat checked, if not altogether reversed.

ROMNEY MARSH SHEEP.

A Breed of Sheep that Has Been Perpetuated for Years.

This wonderful breed of sheep is named from the singular habit in which the race have been perpetuated for a great many years. To understand the situation better it is necessary to say that Romney Marsh is in Kent County, England.

Kent County is situated in the extreme southeastern part of England, and is a kind of point extending into the channel. The nearness to the London market would indicate somewhat its value and prosperity. The marsh lands of Kent used for breeding sheep and fattening cattle comprise 82,000 acres. Of these the Romney Marsh is 44,000 acres. This tract has been redeemed from the sea at some remote period, and because of its wet character has not been reduced to cultivation. The soil is very fertile and produces a wonderful amount of feed. It will carry 20 sheep to the acre in Summer and 10 in the Winter without inconvenience or uncertainty of supplies.



The extremes of heat and cold is a noticeable feature of this situation. The bleak east winds sweep over this level treeless plain with a fierceness in Winter that penetrates the very bones of the traveler, though ever so carefully protected. This singularly inhospitable tract of fertile land is the home of the Romney Marsh or Kentish sheep. No other breed of sheep has been able to maintain itself under such severe temperatures and moist exposures. The Romney Marsh breed of sheep cannot be supplanted in its own habitat. These sheep seem to be almost entirely free from the usual ailments that sheep are liable to, especially on flat, wet lands. This one fact makes them an exception in what we know of sheep breeding. This immunity from parasites and foot rot is due to the presence of salt in the soil and the salt sea breezes that continually sweep over the country. As said, all attempts at supplanting this sheep with what might be considered a more valuable breed have been ineffectual.

The many attempts at crossing with other breeds to modify some of the objectionable points of their character have alike been met with failure. They are perfectly indigenous to the situation. This breed of sheep disappoints the observer again in the peculiarity of fitting them to close crowding or herding. They can stand the closest contact with each other on their own lands. The mutton is said to be of high quality. The sheep rank among the largest breeds. Extreme weights reach 260 pounds.

This breed of sheep has undergone some changes, due to better care, more scientific management, and selection in breeding. They formerly went to market at three years old, but now are ready for the butcher at two years old.

Prof. Wilson, in 1865, describes the Romney Marsh sheep with white legs and head, the latter long and broad with a tuft of wool on the forehead; long, thin necks, narrow forequarters, the body long, with flattish sides and sharp chine, loins wide and strong, belly coarse, thighs broad and thick, with coarse bone and muscle. The wool is an important feature, especially valuable for the length of staple, fineness of quality, and bright, glossy character, which makes it in demand for Flanders and France, being principally used in the manufacture of a fabric known as "Cloth of Gold." The usual weight of fleece is from seven to 10 pounds.

Much the same characteristics are noticeable in the better specimens of the Romney Marsh sheep met with to-day; but the attempts at improvement already mentioned are responsible for an improved form and greater size. These have had the usual influence upon the fleece in adding to the quantity, while the quality remains about the same. It is a better breeding animal than formerly, that it may meet the wants of farmers from the arable lands in the adjoining Counties who buy their feeding sheep from the Romney Marsh.

It is a noteworthy fact that nature has fitted these sheep for occupying this marshy land by giving them large feet that do not poach the soil and disfigure the pastures.

In many respects it will be seen that this breed of sheep is at variance with the common ideas on sheep, especially for healthy sheep lands. The mountains and hills for sheep raising here finds a most notable exception that is interesting to the student interested in sheep habitats.

The American Shropshire Association.

Mortimer Levering, Secretary of the American Shropshire Association, sends us the following: The annual meeting of the American Shropshire Sheep Association will be held in Chicago Tuesday, Nov. 29, 1892, at the Grand Pacific Hotel, 10 o'clock a. m. We earnestly hope you will make it convenient to be present. Our Association numbers 1,000 active members, and you will find it pleasant and profitable to meet the members from various parts of the North American Continent in convention. The Grand Pacific Hotel has made the very low rate to our members of $3 per day for rooms (above parlor floor without baths) including meals. The American Fat Stock Show has been abandoned, and the American Horse Show will be held in Chicago Nov. 27 to Dec. 3.

"It is estimated that 25 per cent. of the sheep of the United States are mutton sheep, producing coarse wool, and 75 per cent. are merino sheep, producing fine wool." This will serve to show the change that has been going on in the flocks of this country, as the best authorities 10 years ago could not place the per cent. of mutton sheep much, if any, above five per cent of all sheep in the United States.

MUTTON IN ENGLAND.

Canadian Sheep Preferred to Those of the United States.

We quote from the last annual report of the Ontario Sheep-Breeders' Association the remarks of Alderman Frankland on the kind of sheep they have been sending to England, and the kind the sheep breeders must furnish if they would establish a trade in export sheep. He says: "There is such a superabundance of common kinds of sheep going into England that unless we have a superior article we cannot get the price that we ought to get. When I left England there were 900,000 carcasses of mutton in the freezing houses that had come from Australia and New Zealand, and at the same time they were arriving in great numbers week after week. We have only been in this export business 16 years, and during that time all these other foreign countries have developed their trade.

"We have improved and increased in our wealth in cattle, but we have made no progress whatever in sheep. If this association is only meeting together to establish good breeds in order to do business with the United States, then there is no use in my talking; but if this association is for the purpose of giving us a class of mutton which will find purchasers in Great Britain, then let us have it, but we have not got there yet. * * * What I would like to see for the future is that we should have a certain number of sheep, not too many, and that they should be of the best quality, so that we might establish a Canadian brand, both for our cattle and our sheep, as we have done for Canadian cheese. * * * It all depends upon the farmer—not only the breeder of sheep but the breeder of cattle also—to give us the right article. Canada is capable of producing quite as good mutton and beef as can be produced in any part of the world, and it devolves upon every farmer in Ontario to make some effort toward this end. Give us the right article and there is no reason why the business should not be a success. Give us sheep of the right character, and if you give us 20,000 or 30,000 wether sheep we can give you fair prices for them. We cannot sell these old rams and baggy ewes at any price whatever, and we have handled very little else up to the present time."

The United States sheep breeder may read the above statements of a sheep dealer and shipper with benefit. It comes from an honest man who knows what he is taking about, and though addressed to a Canadian audience applies equally well to sheep breeders of the United States. If the farmers of this country are to share in this export trade there is much for them to learn—much for them to do before the results will be satisfactory. If the Canadian sheep raisers have need of reconsidering their practices and taking up new standards of sheep for the export trade, what can be said of the sheep raisers of the United States? The wants and wishes of the foreign consumers at present gives the average sheep raiser of the United States very little anxieties. In fact, the American producers of all classes think or care very little about what the home market wants, much less the foreign market. That this indifference should be overcome is admitted, but the trouble is the producers are not specifically and uniformly informed as to what the markets really do want. Some markets want one thing and some another. The duty and remedy for the farmer is to carefully study the market he proposes to use and then furnish what his market wants. There is no reason why the United States should not export vast quantities of sheep to England, provided they produce the kind wanted.

Inquiry from a Sheepman.

EDITOR AMERICAN FARMER: I am a reader of your paper; read your sheep notes, but read nothing on the different diseases of sheep. There was a disease got among my sheep in the month of August, and I lost 14 head—12 lambs and two old ones. I don't know what the disease is. I will give a description: The sheep droop, refuse to eat, get light in weight, are weak and costive, don't run at the nose, and in about two days lay down and die. Some few, however, linger longer. One thing I noticed that there were more lambs died than old ones; the disease affecting the lambs the most. Some say it is bots in the head, distemper, or that they eat some vegetable that made them sick. I would like if someone experienced in the disease of sheep would tell from the description given the name of the disease and a cure for it.—L. H. LINDEMUTH, Lehmaster, Pa.

[It would appear from the description that the sheep and lambs suffered from parasites in the stomach. As treatment we would advise that two tablespoonfuls of spirits of turpentine be well shaken up with a pint of fresh milk, and that a dose of this mixture be given to each animal as soon as it shows symptoms of the disease. The dose should vary, according to the size of the animal, from one or two tablespoonfuls with small lambs to a gill with grown sheep. One dose is usually sufficient, but, if not, it may be repeated after two or three days. In all cases of sheep and lambs dying or doing badly, it is of the highest importance to change their pastures and food. A tonic is desirable, either in food, water, or administered directly through the mouth. A substantial food ration should be gradually introduced that will build up the system and thus give healthy stamina. This will of itself tend to boom the animals over the inclination to disease.—ED.]

Stealing Sheep and How to Prevent It.

In the *Tasmanian* M. R. Foster, late Chief Inspector of Sheep for Canterbury, Australia, recommends the following for consideration:

First. Should ear marks be registered for one ear only, and should the sexes be marked in opposite ears?

Second. Should it be illegal to use an unregistered mark in the legal ear?

Third. Should it be compulsory to ear mark all lambs with a register, either before they are tailed or weaned?

Fourth. Should a heavy penalty be imposed for altering the breeder's ear mark?

Fifth. Should the use of the knife for register ear marks be prohibited?

Sixth. Sould a list of legal ear marks be agreed upon and included in a schedule as a part of the Branding Act, and no others be allowed to be registered?

Chemical Composition of Wool.

Sheep and Wool has this to say about wool: "Of the composition of wool this estimate has been given: Carbon, 50 per cent.; hydrogen, 7; nitrogen, 17; oxygen, 21, and sulfur, 5. While 98 per cent. would be organic, 2 per cent. would be ash. The fiber varies in diameter, the delicate Saxon merino being the thirteen-thousandth of an inch, and the Southdown the eleven-thousandth. Soundness of fiber indicates health. Lustrous wool is long and strong, sometimes 20 inches in length. Old sheep usually lose the power of producing the best wool. As a rule, the wool of marshy and stormy localities is poor, though the wool of Shetland has always been famous, but in this case the breed has remained uncontaminated with inferior breeds. The curls in some wool may be from 12 to 27 in an inch. As soon as the point of the fiber has protruded through the skin of the animal a series of growths takes place. One side grows faster than the other and causes the curl. The finer the wool the greater is the tendency to curl. According to Dr. Bowman the breaking strain of human hair in grains is 1.641; of Mohair, 586; of Lincoln wool, 502; of Leicester, 473. In Southdown wool, however, it is only 86; in Australian, 50, and in Saxony, 39. In elasticity, on the other hand, the Australian wool is nearer that of human hair than that of the Lincoln."

Soiling Sheep-Lambs Every Month.

M. A. Cooper, Secretary of the Dorset Horn Sheep Breeders' Association, in *Rural New Yorker*, says: "No one in this State (Pennsylvania), to my knowledge, engages in soiling sheep. The question has been discussed to some extent by a few of our leading breeders. Soiling is quite feasible, and I have no doubt that the time will come when sheep will be soiled largely in this country. I am soiling cattle, and am perfectly satisfied that it will decrease the cost of producing of beef fully one-half. The beef from an animal soiled is much better than from one allowed to run at large, and the time is coming when the buyers of meat will appreciate the difference, and the price realized for soiled cattle will fully justify the needed labor and expense. It is very true that the lamb business is extending, and the itme is at hand when there will be a demand for lambs every month in the year. To meet this is only a work of time. The Dorset Horn ewe will take the ram at any season of the year, and will produce two crops of lambs per year, under proper care. For one breeder of Dorsets 108 ewes dropped 180 lambs last December, and the same ewes are lambing again this month, June. I have a flock of ewes that have been dropping lambs for the last six months. There is no question that with proper management lambs can be produced for market every month in the year, and it is my opinion that the time is at hand when the soiling of sheep will be found to be profitable and expedient. In all branches of industry cheapening of production has been sought, and the farmer must, of necessity, study this question as applied to the production of mutton."

Dorset Horn Sheep for Australia.

Secretary Cooper, of the Dorset Horn Sheep Breeders' Association of America, is negotiating with a gentleman in New South Wales, Australia, for the sale of a small flock of Dorsets to be exported to that country next season from the United States and Canada. The sheep will be selected with great care, and none but the best will be exported. If Mr. Cooper succeeds in establishing a trade with Australia, he has accomplished a work that entitles him to considerable credit among the breeders of Dorsets in this country.

THE NEW WINCHESTER SHOTGUN.

The Greatest Chance Ever Offered to Get a First-Class Gun.

WINCHESTER REPEATER $20.

SOLD TO SUBSCRIBERS ONLY.

The Winchester Arms Co. has long held the first place in the world for manufacturing high-class firearms. By a special arrangement we are able to offer their repeating shotgun at a fraction of its real value. The magazine or repeating gun has superseded the breech loader for field shooting. This gun has a 30 or 32-inch barrel and is 10 or 12 gage, according to choice. It carries six loaded shells and has a rolled steel barrel, pistol grip stock 12½ inches in length, drop 2½ inches, and choke-bore. The 12-gage gun weighs about 7½ lbs., and the 10-gage gun about 9½ lbs. Wherever it has been introduced the magazine gun has superseded the breech loader as effectually as the latter took the place of the muzzle-loader. In all kinds of field sport, from wild geese to quail-shooting, the advantage of having six shots ready at a rise instead of two is apparent. In actual practice this gun can be emptied of its six shots in eight seconds by a good wing shot. Thousands have been sold this season to prairie-chicken shooters in the West, and the gun has made a splendid record when put to the test of the "bag" in competition with fancy-priced breech-loaders. Sold only to subscribers. The gun will be boxed and sent to the nearest railroad station for $20. The purchaser will pay the express charges, which will not be large, because we have arranged to have shipment made from a central point. In ordering be sure to give your nearest railroad station, because the guns are too heavy to be sent by mail.

THE APIARY.

Hummings.

At the Missouri State Beekeeper's Convention it was decided that it is not practical to produce a first grade of comb honey without separators.

The wax of a species of bee common in Patagonia, Terra del Fuego, and other parts of southern South America and the adjacent islands is a dark blue in color and is said to be more poisonous than arsenic.

It is estimated that California's honey and wax production is worth one million and a half of dollars, and it is thought that with some outlay and proper aid it could be made to reach not less than $35,000,000.

A California journal tells that a beekeeper in the big Santa Clara Valley moved his bees into his bean fields when other sources of nectar supply were exhausted, and the result was a good crop of delicate, first-class honey that did not cost him a bean.

Some writer thinks that the "swarming instinct might be successfully bred out of bees if it were deemed desirable to destroy it." He might try it himself, and we are sure many beekeepers would call him blessed for any information as to how he did it.

E. Strong suggests that the "nameless bee disease" which has been such a puzzle to beekeepers for some years, and which Prof. Cook considers a condition, not a disease, and says indicates a meager diet, may be really surfeit, caused by bees being too suddenly "fed" when in a starving condition, and gorging themselves with too heavy and concentrated a sirup, or with old honey not sufficiently thinned. It has been noticed that the disease attacks starving bees immediately after they have been fed. It might be a suitable subject for the experiment station to determine how near starved bees must be to become gorged, and also how thin the food should be to prevent the surfeit.

Who Will Answer Mr. Wendle?

EDITOR AMERICAN FARMER: Will you please state in your next journal how many pounds of honey are required to Winter a colony of bees in Kansas? I never see any accounts of the amount of honey bees require.—J. B. WENDLE, Beattie, Kan.

The Hive for Winter.

EDITOR AMERICAN FARMER: Some writers on bees in Winter, and bee culture in general, appear to think that the Winter life and the well being of the bees depend upon the hive. It is not so; the hive really plays a very insignificant part in the life, economy, and Winter comfort of the bees—that is to say, the part is insignificant when compared with other parts or factors.

The colony that passes the Winter in a nail keg may be stronger in the Spring than the pampered colony of luxury that lives in a $30 hive. It is believed that more colonies have been smothered and weakened in costly double-walled hives than have been brought through the Winter in good condition. Bees have strongly developed the instinct of self-preservation. If a colony of bees finds itself in a soap box or shattered hive full of holes and cracks, the colony begins at once to close all these openings and to make tight, and it succeeds.

Propolis, a resinous substance from the buds of trees, is collected by the bees in great quantities, considering the size of the bee, and used to stop all cracks. Propolis is used not only for this purpose, but also as a paint or a varnish for the interior of the hive. Therefore, the bees are not dependent upon paint on the outside of the hive to keep warm in Winter; they paint the inside themselves and make it air-tight. Now, all the bees want is a wall or partition to protect them from the wind and weather. If this wall, the wall of the hive, be only an inch in thickness, or even less, and be wind and weather proof, it is sufficient.

It is not the hive that is responsible for the life of the bees during the Winter; it is the condition of the colony—its size and its stores. If it be a strong colony with abundant food to last till Spring, it will appear in the Spring strong and vigorous even if it has lived all Winter in a soap box with a big crack on the northeast side. I do not recommend cracks in hives any more than in barns; but animals, even bees, well fed will survive and in a restricted way flourish if there be cracks and chinks where the wind whistles and the snow drifts in.

The hive good enough for Winter is the single wall, two-story hive, with two good coats of paint, and costs by the 100 not over 25 cents. Let this hive stand where it stood all Summer; leave the entrance wide open, but so shallow, if near the ground, that mice cannot enter. If the hive stand in an exposed place, build a windbreak on the north and west.

Over the frames, crosswise, place pieces of wood two inches thick, and on these place a mat of any material that will absorb moisture, and then over all pack sawdust, leaves, chaff, or cut hay. There should be no upward ventilation in a hive. The top should be as tight as it can be made; there will be ventilation enough if the entrance be left wide open.—JULIA ALLYN.

Honey that Does Not Granulate.

The following question was discussed in the columns of the *American Bee-Keeper*: "If extracted honey does not granulate, can it be considered a sure proof of adulteration in all cases?" Twenty negative replies were received out of 23. Granulation is a proof of purity, but the reverse is not necessarily true. There are certain kinds of honey in certain localities which would never granulate.

G. W. Demaree said: "I have a jar of honey 10 years old which I took from the hive with my own hands and it has never granulated. It is to-day thick, pure of flavor, with no signs of granulation."

J. A. Green says pure honey may be so heated that it will not granulate.

Mr. A. E. Manum "feeds back" extracted honey for the completion of unfinished sections. He adds one-third its bulk of hot water, and finds this method profitable.

Supply Dealers vs. Honey Producers.

EDITOR AMERICAN FARMER: There are 10,000 beekeepers and 51 supply dealers in the State of New York. The supply dealers have been running rough shod over the beekeepers in conventions and at fairs. They are now beginning to act human, and in the near future may actually get quite humble.

A dealer in bee implements with an enlarged head and a small heart is an undesirable man to put up with. Supply dealers and queen breeders should not exhibit honey for a prize in competition with the honey producers. Therefore I send you the accompanying list to encourage all engaged in the bee business. By making such a list the producers will gain satisfaction. It is they who do the drudgery and solve the doubtful problems.

The supply dealer is useful, but he lives off of the producer. He can never advance very far. At the same time he is the producer's dreaded rival, and usually takes all the prizes, and receives the appointment as judge of honey exhibits, which is an injustice to the producer; they should not be chosen as judges of prizes for honey. Let the judges be disinterested producers who have no honey on exhibition.

The New York State premium list for 1893 for honey products: The largest and best display of comb honey, not less than 250 pounds, $30; second, $20; third, $10.

Largest and best 250 pounds extracted, $20; second, $15; third, $10.

Best case, 16 pounds, white comb honey, $10; second, $8; third, $5.

Best display, 50 pounds, candied honey extracted, $10; second, $8; third, $5.

Best display, 50 pounds, dark comb honey, $10, second, $8; third, $5.

Best display of beeswax, $10; second, $8; third, $5.

Queen Breeders' Department of Apiarian Implements and Queens:

Best frame of Italian bees in observatory hives, $10; second, $8; third, $5.

Best display of Italian bees with progeny, $10; second, $8; third, $5.

Best display of different races of queens and progeny in observatory hives, $10; second, $8; third, $5.

Best imported Italian queen, $10; second, $8; third, $5.

Best quart honey vinegar, $5; second, $3; third, $2.

Best beehive for comb and extracted honey furnished complete, $20; second, $10; third, $5.

Best honey extractor, $10; second, $5; third, $3.

Best exhibit apiarian supplies, $20; second, $15; third, $10.

Best brood foundation, $5; second, $3; third, $1.

Best foundation for surplus, $5; second, $3; third, $1.

Best bee escape, $1.

Best display honey plants pressed, mounted, and labeled with date of bloom, $10; second, $8; third, $6.—J. W. TEFFT, Buffalo N., Y.

Storing Comb Honey.

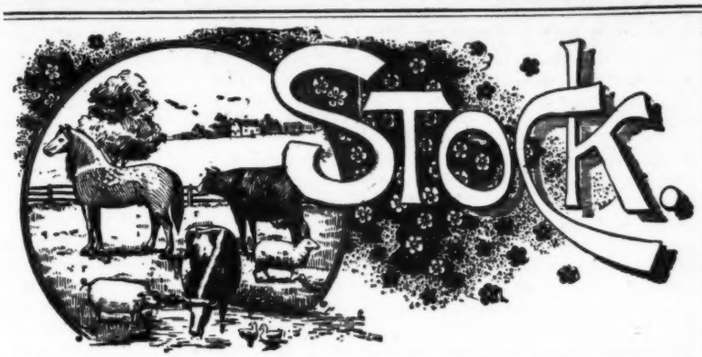
The following is from *Gleanings*: How and where should comb honey be stored during Winter? Is it necessary that the temperature in the room in which it is kept shall never go below the freezing point? Comb honey which I tried to keep over Winter last year cracked badly. Is it necessary to keep such honey in a warm room to keep it from cracking?

I looked all through this query, expecting to find that this honey not only cracked, but that it granulated also, for I do not know that I ever kept any honey over Winter where no pains was taken to keep it from the cold, but that a part of it granulated, and the granulating of honey in the comb makes it more unsalable than almost anything else which can happen to it which does not entirely destroy the comb. Comb honey should always be stored in a warm, dry place during the Fall and Spring months at least, when a great change of temperature is likely to take place; but during the Winter it may be kept in a dry basement room or cellar where no frost ever reaches, provided you are on the lookout to take it out when the temperature on the outside rises much above that in the basement, otherwise the warm, moist, outside air, coming in contact with the surface of the cold or cooler honey, will cause moisture to stand in drops on the combs, when the honey will rapidly deteriorate. If I were trying to keep honey of any amount, which I wished to preserve in salable form, I would not let the temperature of the room ever go below 60°, while from 70° to 90° would be better. I once kept some section honey for three years, and found it better at the end of three years than it was when taken from the hive. This honey was placed on a shelf about four feet from the floor of the sitting-room, right back of a base-burner coal stove, during the time the stove had fire in it; while during the Summer months, when no fire was kept in the stove, the honey was carried to an upper chamber, facing the south, where the sun made the room very warm, in addition to the warmth coming from the kitchen stovepipe, which ran through this chamber. In this way the honey never "saw" a temperature of less than 60°, while from 80° to 100° was the rule much of the time. When I cut this honey it was nearly "jack wax," and for quality it was not surpassed by any I ever tasted. I have often thought that it might pay to use this plan on a whole crop of honey during years when the production exceeded the demand, thus causing low prices to prevail, while the very next year might be a poor one, so that, thus keeping, it might double in price. When combs of honey are to be given to the bees, the cracking of the comb does no harm, for the bees will fix it up during the next season so it cannot be told where the cracks were.—G. M. DOOLITTLE, Borodino, N. Y.

Vermont Beekeepers' Association.

The annual meeting of the Vermont Beekeepers' Association will be held in the city of Burlington Dec. 28 and 29, 1892. Everyone interested in apiculture is earnestly desired to be present. As a beekeepers' association we know no State lines, but will gladly welcome all that come, regardless of residence.

Programs giving full particulars will be published soon, for which address H. W. Scott, 125 Brooklyn street, Barre, Vt.



Stable Talk.

It is well to remember that stables can be kept sweet by the use of land plaster.

Steers should be fed on whole corn to finish them.

If convenient racks are made in the stable the waste of hay will be brought to a minimum.

Draft horses are of more use to the farmer than trotters, and it is better for him to turn his attention to them.

Be careful in feeding the calves so as not to ruin their digestive organs. Injudicious feeding oftentimes wroughts great injury.

We have urged the importance of getting rid of poor animals and not carry them through the Winter. It is hardly possible that the animals can be kept and sold at a profit.

Care of the Horse.

The Veterinarian of the Louisiana Agricultural Experiment Station in a report recommends for the horse bot attending to the general health and condition of the animal by thorough grooming and cleanliness, and improving his appetite and digestion by the use of some mineral or vegetable tonic, such as gentian, ginger, cinchona bark, or some of the salts of iron. Under the head of the screw-worm fly an interesting case is given in which the screw worm rendered valuable assistence in removing a morbid growth in a hoof crack of a mule brought to the infirmary of the station for treatment. The worms removed the growth completely, and the veterinarian then removed the worms. Nothing is recommended for the ox warble except the application of tobacco juice and a 2 per cent. solution of carbolic acid to prevent the deposition of the eggs.

The stomach of the horse is very small in comparison to the size of the animal, and the digestion very rapid and effective. The horse having such a small stomach requires to be fed frefrequently in order to supply the demands of the system; not being constructed for long fasting, when the stomach is over-distended and its powers overtaxed, it is quite incapable of performing the functions of digestion. This theory accounts for the greater mortality amongst horses and mules from flatulent colic and inflammation of the bowels than any other class of disease. The condition of working animals should be watched very closely, for if they lose condition they must be overworked or underfed, or have a bad keeper.

There is no economy in overworking animals, as they gradually lose tone and strength, the general condition is injured, they become poor, wear out very quickly, their value is considerably lessened, disease is very prevalent amongst them, and the owner's hand is constantly in his pocket buying fresh supplies.

Regularity in feeding is very essential. A horse should be fed at least three times per day, not that he should be allowed that feed extra in amount of food, but that the necessary total amount for the day should be divided into at least three times.

A Cure for Colic.

EDITOR AMERICAN FARMER: I have a horse which gets sick quite often, and while I do not know what is the matter I strongly suspect that it is colic. A number of my friends are of the opinion of myself. What is the best way to effect a cure?—HENRY BRUBACK, Baltimore, Md.

[The disease is undoubtedly colic. A good remedy for it is as follows: Take two ounces of sweet spirits of niter, one ounce of laudanum, sulphuric ether, one ounce, and one pint of water. Shake so as to thoroughly mix the different ingredients. Give one dose, and, if necessary, repeat in one hour.—ED.]

The American Shetland Pony Club.

The annual meeting of the American Shetland Pony Club will be held in Chicago Thursday, Dec. 1, 1892, at the Grand Pacific Hotel 7:30 p. m. We earnestly hope you will make it convenient to be present. The Grand Pacific Hotel has made the very low rate to our members of $3 per day for rooms (above parlor floor without baths) including meals. The American Fat Stock Show has been abandoned, and the American Horse Show will be held Nov. 27 to Dec. 3.—MORTIMER LEVERING, Secretary.

The National Swine Breeders' Association.

We have received the following communication from John G. Springer, the Secretary of the Association: Owing to the abandonment of the Fat Stock Show, the meeting of the National Swine Breeders' Association, appointed to be held in the Sherman House, Chicago, Ill., Nov. 22, 1891, is by direction of the Executive Committee, postponed. As it seems important that a meeting of the Association be held at an early day, the Executive Committee will give notice of time and place for such meeting as soon as possible. The proceedings of the meetings held in 1890 and 1891, now being printed, will be sent members at an early day.

Meat for the Farmer.

EDITOR AMERICAN FARMER: All farmers who have hogs on their farms are now feeding them liberally in order to fatten them as quickly as possible and have them ready for market. There is nothing in this that is wrong. They should endeavor to get as much flesh on the animal as they possibly can with the least economy. But in the marketing of them I wish to say a few words. Of course, no man can be blamed for selling all his stock if he secures a good price for it, but it is well for him to keep enough on hand to supply the wants of his own family. The advantages of this are many fold, and I will endeavor to explain a few.

If a farmer secures a good price for his products, in fact, more than what is usually the price at that time of the year, it necessarily indicates that the selling price of the article will be greater when the consumer gets hold of it. Now, when the farmer sells all the stock he has on hand and has none to supply his own family, he must, of necessity turn around and purchase what he needs. Consequently, when he has to buy these goods he will have to pay the consumer's price, which is a good deal more than what he received for his stock. It will be seen that it is a good deal cheaper in the first place for him to have kept enough live pork on his place to feed his own family. This shows that the farmer should look ahead. He is practicing poor economy if he does not.

Again, there are many unprincipled men who put animals on the market which are more or less affected with disease. Many farmers kill porkers when they begin to show signs of disease to prevent them dying on their hands. It may seem bold and strange to make this statement, yet, nevertheless, I know exactly what I am saying. It is unlawful, no doubt, but that does not hinder this class of people from continuing their nefarious work. I have had two people brought to justice for doing this, and will bring as many more as I come across. If honest farmers would do as I have done, it would not take long to make these people afraid to do this work. Numerous diseases are liable to arise from eating such pork, but what does the person care who markets them? He has got his money for the animal, and he feels secure from detection.

These are the two strongest reasons why I think a farmer should raise all the meat possible on his own place. He knows exactly what he is eating when he does this, and another thing, he exercises more cleanliness in preserving the meat than that which is sold to the consumers. Before you market all your hogs read this, and probably you will leave enough to keep a supply on hand for the use of your own family.—E. J. C., Irwin County, Ga.

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Pen Notes.

Hogs are particularly fond of a variety and change of food.

Clover forms a valuable adjunct in the food of the hog, and especially when the animal is being prepared for the market.

Prof. Henry is of the opinion that you cannot feed lean meat into a mature hog any more than you feed constitution in a man. He thinks that it all runs in the direction of breeding.

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Cacklings.

It has been demonstrated by a farmer near Hammonton, N. J., that broiler raising with the milk dairy pays well. With a brooding house of 1,000 capacity and a dozen cows he can make more clear cash than at general farming.

A majority of failures with incubators are principally due to the ignorance of those who operate them. By this it is not meant that all incubators are a success, but that there are a good many excellent incubators on the market there can be no doubt.

In our market reports we quote the price of new-laid eggs as being greater than others. According to the rules of the New York Mercantile Exchange, eggs to pass as new-laid cannot lose under test more than 10 eggs to a case of 30 dozen, or 12 eggs to a case of 36 dozen.

Partridge Cochins in good plumage are beautiful fowls. The delicate pencilling of the hen's breast is something that the eye of an artist could pattern after. The male bird is never as accurate in marking as the hen, yet more loudly colored; consequently a showier bird, and besides the hens one is not so apt to notice the plumage of the gentler sex. Partridge Cochins are very good layers for large fowls, and in some respects more active than the white or black Cochin fowls.

The incubator and brooder are now established necessities to anyone raising poultry for market. They are now made so accurate and cheap in cost that anyone can own a good one. The old hen, of course, will still remain a fixture on many farms, in some cases just for the novelty of seeing the brood about her on the place, while others accustomed to old-time ways would rather leave this earth for the home beyond than depart from the trodden path of their ancestors, so that such people are not the kind to do much talking to about modern ideas in the propagation of poultry for our markets.

We are all naturally too impatient in our ambition to raise large flocks of fowls and grow rich faster than the average farmer of the present day. My reader, be content to start small and climb up. You will then learn what you should know about poultry raising, the manner in which you must market them to advantage, and numerous details that will come up that cannot be ridden over hastily. Make haste slowly, and your success is bound to come. Nothing today is better as a money earner than chickens on the farmer; but you must act wisely in pursuing this branch of farm life to expect good results.

Marketing Eggs.

The Winter season is the most profitable for the poultry raiser in the sale of eggs. The scarcity of eggs makes the price higher, and the greater the number of eggs laid the greater will be the profits. We do not intend to say anything about the manner of securing eggs in the Winter time, but it is our desire to call your attention to another thing, and that is the manner in which the eggs are shipped to market.

We would advise that all eggs be washed before being packed in the crate preparatory to being shipped. We do not mean every egg, but all eggs which are dirty, and there generally manages to be quite a number in the shipments the farmer makes. You can judge for yourself as to how the eggs look, and readily see how the dirty eggs spoil the looks of a fine lot of eggs. The farmer may reason that the dirt on the outside of an egg does not deteriorate the quality of the egg. This is true; everyone is perfectly familiar with the fact. This is not what we are speaking of. The dirt deteriorates the appearance of the eggs and prevents them being sold as quickly as the clean eggs.

From our personal knowledge we will recite a fact. A retail dealer bought a number of eggs from a farmer, and among the lot there was an unusually, large lot of dirty eggs. The farmer was unable to sell them at the market, probably on this account, and he sold them to the dealer for a small sum rather than take them home again. The dealer had a large number of customers, and when eggs were bought the purchaser almost always wanted the clean eggs. The dealer seeing this carefully washed all the eggs and charged a few cents per dozen more, at which price the eggs were readily sold.

We only give this as an example. A lot of clean eggs is pleasing in appearance to the eye, and will always sell more quickly and at a higher price than dirty eggs. The farmer can let his children wash the eggs, and they will undoubtedly consider it play in doing so; or he can do it quickly himself. Commission merchants will pay more for a lot of clean eggs, as well as the consumer, and even eggs which have been limed can be made to look better by being rubbed with a piece of cloth.

THE WHITE WONDERS.

A New Breed which is Acquiring a Good Reputation.

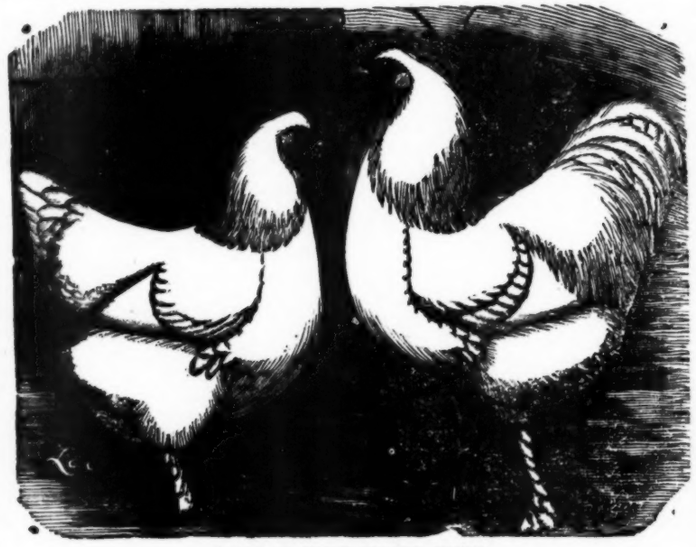
We present to our readers this week a cut of the White Wonder fowls, originated by Mr. Wm. N. French, of New Haven, Vt. In a letter we have received from Mr. French, he says:

"I have made poultry raising a large part of my business in connection with my farm work for more than 20 years. Having tested nearly all the leading varieties, I began the work of originating the White Wonders in 1886, but have never exhibited until this Fall, as I wished to get them as nearly perfected as possible before I presented them to the public. In this way, and as a result of my long and earnest work, I now have a breed originated from crosses of the best standard-bred fowls, which are extra layers, hardy, and of large size, with yellow beak, legs, and skin, dressing clean and yellow at any age, with no black-pin feathers.

"I made my first exhibit of 21 White Wonder fowls and chicks at the Columbian Fair, held at Burlington, Vt., last month, with very flattering results in taking orders. I received a diploma from the society, which is only given on evidence of superior merit. White Wonders have also been exhibited by my patrons in different States, having in each instance received a first or special premium."

Mr. P. H. Jacobs, in the *Poultry Keeper*, says of them:

"This breed (White Wonder) seems to be made up from the White Wyandotte and Light Brahma, but Mr. French says he has established them as a breed. As layers they are superb, Mr. French having forwarded a pair to us to be tested before placing them before the public, and we found them as they were claimed—egg producers. Bayard & Scates, Commission Merchants, Boston, Mass., state that with them they sold for three cents a pound above the highest market price as broilers, they being of fine color, plump, clean dressed, well fatted, saying, also, 'They are the finest box of chicks we ever sold.' This is a strong indorsement, and if they now breed true as a breed will no doubt become favorites. They strongly resemble the White Wyandottes, but are larger, and have feathered legs. They may never be a show bird, but as layers and market fowls will hold a high place."



A PAIR OF WHITE WONDER FOWLS.

A Place for Ducks.

One of the principal duck farms of Long Island, N. Y., is becoming quite noted for its choice fowls. On the south is the great South Bay, extending nearly the length of Long Island, and on the east and west sides of the farm are small streams, the land having a gradual slope to the water. Pekin ducks are the specialty, and on the banks of these streams the yards of the breeders and the fattening pens are situated, where thousands of these ducks may be seen every season. There are 650 breeders, which were selected from thousands, and only the largest and best taken, some of which weigh 12 pounds each. About 700 hens of various crosses are kept to furnish eggs for incubators. There are numerous buildings devoted to poultry, the total floor space being 15,000 square feet. This firm makes ducks and poultry pay well.

Poultry for Women.

A farmer's wife who does not pretend to handle many hens, but simply a sufficiency for her own use and those she sells once a week at the village near by, has four dozen eggs each evening and a few over. These four dozen average her from 20 to 22 cents per dozen, or 80 cents a day as an average, and six days would bring $4.80, and $19.20 per month, for at least six months out of 12 in the year, $115.20 per annum sure, but more than that by $25 is about certain. This one item, without speaking of the number of surplus chickens that she will sell in the market, will pay the taxes on the farm and buy some clothing besides, and still some farmers can't see where there is much to speak of in a flock of chickens, ducks, or turkeys. Certainly with the reasonable facts here before you it should convince you that you are wrong, and the time to begin for your own good is right now.

AGRICULTURAL MATTERS.

Items Which are of Interest to Farmers.

ABOUT ROOFS.

EDITOR AMERICAN FARMER: The usefulness of a building and the length of time which it will remain serviceable will depend largely upon the condition of the roof by which it is covered. One of the main objects of a building, whether it be a house, a barn, or a shed, is to furnish protection from storms. If the roof is poor this purpose is served very imperfectly. Rain or melting snow dripping through the roof of a house not only causes a great deal of annoyance to the occupants, but also seriously damages the furniture, stains the ceilings, and injures the carpets. It makes the house damp after every rain, and not infrequently is the cause of sickness of the inmates. A leaky roof on a barn causes a loss of hay and grain, while over a stable such a roof causes a great deal of discomfort to animals and to the men who have to take care of them.

Whatever is kept in a building is damaged by water coming through the roof. Even the wagons and farm tools and machines are sometimes seriously injured in this way. The wood parts decay, the iron and steel portions rust and corrode, and thus their strength is impaired and their usefulness is diminished. But the injury to the building itself is usually greater than is that which is sustained by its contents. Water works into the joints between the timbers, and, as it cannot readily dry out, soon starts the processes of decay. Unless the roof is quickly repaired these processes go on with increasing energy, and the building is rapidly weakened. Many a building which was originally strong has either fallen in or become so unsafe that the owner has removed it, long before it should have shown any indication of weakness. The necessity of putting up a new building has grown out of the neglect of the owner to keep a good roof upon the old one.

It would naturally be supposed that a desire to avoid the discomforts and losses which are caused by leaky roofs would lead owners of buildings to keep them well covered; but experience and observation show that this motive is not sufficiently strong to secure this desirable result. Go where one will, many defective roofs will be found. This is probably due to the fact that extensive repairs involve considerable work and expense, and the majority of the people have all of these things that they know how to handle. But when repairs are needed, delays are costly. A few dollars spent at the right time will prevent the necessity of paying a great deal more at a later period. And in the case of a leaky roof, prompt attention will also prevent a great deal of damage to the frame of the building as well as injury to its contents.

By far the larger part of the roofs of farm buildings are covered with shingles. Many of these roofs now need repairs of some kind, and it will be wise to make them before Winter sets in. In many cases there are a few defective spots, while most of the roof is good. Skilful patching will fix up these roofs so that they will last for quite a time. Some of them can thus be made serviceable for several years. But the repairing of an old roof is more difficult than entire reshingling, and unless the farmer is handy with tools, and is able to get around on a roof pretty readily, it will pay to employ a carpenter to do what patching is required. The work should be done when the surface of the roof is dry, as the workman will not be as likely to slip as he will if it is wet; but in order to guard as much as possible against the splitting and breaking of the old shingles it is best to attend to it within a day or two after a rain. Where there are a great many defective places, and the shingles over the whole roof are badly worn, are warped, or have commenced to decay, it will be much better, and in the end will be cheaper, to re-shingle the roof than it will to attempt to make merely temporary repairs.

When the roof is re-shingled any defective roof boards which may be found should be removed and good ones substituted. This is sometimes neglected, and the new covering of the roof does not last as long as it should. It is also important to get a good quality of shingles, though if care is used in laying, and a very few of the poorer ones are thrown out, the second grade will answer very well for sheds and barns. Cedar and pine shingles are the best. Spruce does very well for this purpose, and when care is taken in selecting the timber and laying the singles, chestnut will last from 10 to 15 years.

The way in which the shingles are laid is even more important than the kind of timber of which they are made. The very best of shingles will not make a good roof if they are carelessly put on. And it is not only necessary, as everyone who lays shingles knows, to "break joints," but a little space should be left between them to allow for the expansion of the wood when it is wet. If this is negleted the shigles will warp badly, many of them will crack, and the roof will soon begin to leak. It is also important to drive the nails high enough so that they will be covered by the next course of shingles, but low enough so that they will hold securely.

Whether it will pay to paint a newly-shingled roof is a question regarding which there is a great difference of opinion. If the shingles are dry and are painted on both sides, so that the under surfaces, where moisture is the longest retained and does the most harm, will be protected, they will last longer than the same grade of shingles will if unpainted; but whether there will be enough gain in this direction to pay for the paint and for the time and work required for its application, is somewhat doubtful. If green timber is used paint will prevent evaporation of its sap, and instead of acting as a preservative, will hasten its decay. Whitewash, though often used, is hardly durable enough to be of much service.

As considerable expense is necessarily involved in reshingling a roof, it is the part of economy to use good material and to do the work in a careful manner.

DIRT FOR MANURE.

One of the common recommendations of agricultural writers at this season of the year is to secure a quantity of dirt to be used in the yards or the stables in order to increase the quantity of manure. With certain limitations this is excellent advice. Without qualification it may, if followed, lead to the performance of a great deal of useless labor. In the latter case, however, the fault is not in the material, but is either in the condition or the quantity in which it is used.

When dry and free from stones, roots, and other foreign material, including the seeds of weeds or grass, dirt is excellent material to use as bedding in the stables and to put into yards in which cattle or hogs are kept. It is a good absorbent of liquid manure, and can be used in a manner which will prevent the waste of this valuable food for plants. It is also an excellent deodorizer, and to some extent it acts as a disinfectant.

Though it may be very valuable, the degree of usefulness of dirt for the purposes named is greatly modified by its condition. If it is not thoroughly dried its absorbent powers will be impaired, and it will do comparatively little good in the stable, the yard, or the compost heap. It can only hold a certain proportion of moisture, and the more nearly saturated it is with rain or spring water the less quantity it can take up of the liquid manure which it is designed to save. And when, as it is too often the case, stones, seeds, roots, or other worse than useless materials are mixed with it, the value of the dirt is diminished in proportion to the quantity and quality of the foreign material which it contains.

The quantity as well as the condition of the dirt must also be considered. Many a farmer has done a great deal of work in carting dirt to and from his yards for which he has received very little reward because he used so large a quantity of this material as compared with the quantity of the manure with which it was mixed. Drawing a great quantity of dirt into a barnyard in the Autumn and spreading it upon the fields a year later does but little good. The material is dirt when it is taken to the yard, and it is very little more than dirt when it is taken out. The little wash which has reached it from the manure piles and the droppings of the few cows which have lain upon it during the short Summer nights have added but little to its value, and a part of what it received has been lost by evaporation and leaching. In some parts of a State in which the writer formerly lived it was a common custom each Fall to spread a large quantity of dirt over the surface of the barnyard. In some cases this dirt was plowed once or twice during the Summer. In others it was never disturbed until it was drawn to the fields. The farmers who followed this course had a good deal of manure, but a large proportion of it was of very little value. They made the mistake of regarding quantity as equivalent to quality. Probably a single load of stable manure contained as much real plant food as 10 loads of this dirt, which, on account of its having been put into the barnyard, they dignified by the name of compost. Sometimes muck was used in this manner, which was drawn quite a distance over hard roads and in the Fall drawn back nearly to the place from which it was brought. If the muck had been piled in the field and worked over two or three times it would, by heating and exposure to the air, have been brought into a better condition than it was in the yard, and a good deal of hard work on the part of the teams would have been avoided. The method which has been described was a good object lesson showing how not to use dirt for manure.

As already indicated, there are ways in which dirt can be profitably made to increase the size and value of the manure piles. To secure this desirable end it is necessary that a good quality of dirt be secured; that it be free from foreign materials, and that it be thoroughly dried. If for use in stables or in pigpens it should be put under cover, and it is much better for composting if it is kept dry. If what is to be used for mixing with manure cannot be covered it should be so placed in the yard that water will not stand upon it after a rain. If it is used as a covering for the bottom of yards in which cattle are kept during the Winter it should be piled up in the Spring and layers of manure should alternate with layers of dirt. When the mass has heated well it should be worked over and the dirt thoroughly mixed with the manure. During the Summer it should be shoveled over once or twice more. Dirt treated in this way will not be as rich as that which has served the purpose of an absorbent in the stables, but if used in proper quantities it will be of a good deal of value in promoting the growth of crops, and the labor of securing and handling it will be profitably expended. Perhaps it should be added that if anything in the line of obtaining dirt for manure is to be done during the present season the work should be commenced without delay.

RYE.

Though rye is not one of the most important crops, it is grown to some extent throughout a large portion of the United States. It will grow on a large variety of soils, is quite hardy, and with anything approaching fair treatment will yield a reasonable degree of profit. There are many places in which the area devoted to this crop might be profitably increased.

The average yield of grain per acre is much smaller at the South than it is in the Northern States. This is in a great measure due to the fact that in the former section rye is much more largely grown for Winter pastures than it is at the North. In many parts of the South it is also grown on poorer land, and less attention is given to the selection of seed and the preparation of the soil. It is very far from being an exacting crop, either as regards soil or cultivation, and there are few localities in which it cannot be readily produced.

Where the climate is warm enough to enable it to grow during the Winter rye is a good crop to put in for green fodder at this season. At the North it can be profitably grown for feeding green in the Spring. In most places it will pay better to grow it for its grain and straw. The former, if well ground and bolted, makes very fair bread, either alone or mixed with Indian meal, and is also good for making biscuits and griddle cakes.

When ground without bolting it makes a good food for pigs and for cows which are giving milk. It can be fed alone, but is better when mixed with an equal quantity of Indian corn. The straw is useful for bedding, for tying the tops of cornstacks, and various other farm purposes. In some places it brings a good price at mills where it is made into paper.

As it can be sown much later in the season, rye makes a better crop than wheat to follow corn or late potatoes. And though late sowing is not to be recommended, it is sometimes a great convenience, and it does not prevent the growth of a fair crop. At the North rye is sometimes sown late in November—in some instances so late that the seed does not come up till the next Spring—and while the yield is not as large as it would have been from an early sowing a failure of the crop is rare. In sowing late it is well to take special pains in preparing the land and to use an extra quantity of seed.

Rye can be grown on thin soils, with little or no manure, but it does much better on rich land and will pay well for a moderate quantity of fertilizer applied at the time of sowing or early in the Spring. In short, while it can pretty much take care of itself, rye will pay well for the same degree of care and attention which is given to wheat.—ELLIOT, Buffalo, N. Y.

OUR MAIL BASKET.

Correspondence of General Interest from Various Sections.

THE FARMER'S WIFE.

EDITOR AMERICAN FARMER: There is a great deal said and written about the farmer, but we do not hear so much about the farmer's wife. It is true that in discussions relative to the farmer's interests the wife is included, and of course everything designed to help the farmer, to improve his tools and methods, helps the farmer's wife.

Still, she is a silent factor often, apparently, and often gets little help except that which come indirectly. People generally who have had no acquaintance with what goes on on a farm, a milk or dairy farm, have little idea of the work that is done—must be done in the house—the hard work, the drudgery and the terribly wearing monotony.

On a great many farms where hired men—one or two the year round, and more in haying time—are employed, the farmer's wife does all the work. The farmer has help out of doors, but the farmer's wife indoors has none, and when the work on the farm increases more help is hired, but in the house, often, perhaps usually, no extra help is thought of.

On the milk farm the milkman must be on his way to the city by half past four in the morning, and on some farms he starts long before that time, and must have his breakfast before he goes; then comes the breakfast of the farmer and the other men; then bed making, sweeping, and preparing for dinner—dinner for three or four hungry men. The men are so busy they cannot bring vegetables for the dinner, except the potatoes, perhaps; the farmer's wife must pick peas, pull beats, shell beans, shuck sweet corn, and cook them all, besides many other things; and in some cases she must bring her own wood.

If in haying time a lunch must be taken into the field—something good—"Canterbury fritters," "Brighton muffins," "huckleberry cake," "Roman cookies," and such good palate ticklers, besides ice cold coffee. The men are so busy they cannot even come to the house for it; the wife must carry the heavy basket across the farm, perhaps, in a hot afternoon. Then comes supper, and on many farms this is delayed till the last chore is done, for the farmer and his men do not want "to wash up" till all is done. It may be 7, 7:30, or 8 o'clock before the supper be reached.

After supper the men have nothing more to do, but the farmer's wife works on, has all the dishes to wash and to put away, mix bread, perhaps, and prepare for the breakfast that comes very early in the morning. It may be 9 o'clock and after before all is done, and then to bed, to rise, not with the lark but long before he thinks of getting up, and take up the same or similar round of duties. Think of this day after day, month after month, and year after year. One cannot help exclaiming: "Why does not the farmer's wife strike?" The farmer may not be unkind, but he is often thoughtless, especially if he be strong physically; ambitious, if he delights in work and doing about so much every day. Before he is aware of it himself he becomes a driver, not so much by word as by example, and all working with him cannot keep pace with him and live out their days.

A farmer's wife in a Middle State, after haying, wished to go to see her sister, an invalid, and the only relative, living in Maine. She had wanted to go every year for a long time, but the farm work would not release her. But she thought she would go this year, for her husband had as much as promised her a vacation, but he begged off on account of work which he had laid our for the time between haying and harvesting, and she could not go. It was a great disappointment, and if her husband had not been blind, so engrossed in his plans for the future, he would have seen a change in her. A few weeks later she wanted to go to a picnic given by the church and Sunday-school, but on that day the farmer had engaged extra men for some special work and she must remain to cook for them.

Within a month this weary woman found rest at last in death. Worked to death, she dropped at her work, gasped, and was gone. The husband was a good man but thoughtless. It was pitiable to see him. He awoke to his senses too late. He exclaimed again and again, "Why couldn't I see that she was dying by inches! Why didn't I let her go—help her to go to see her sister! Why didn't I let her go to the picnic! She said, 'I'd like to see the folks once,' and there she stopped. I know what she started to say, that she'd like to see the folks once more; she knew she was dying, but I, blind, saw nothing, and patient without a murmur, she worked on till death relieved her."

If we bend down a tree and continue to bend it, it will break. It is the same with the body and the mind of man and woman. If the burden be heavy and continuous, it bears down to death. Let those who help to impose these burdens lift them occasionally, put them out of sight and mind of those who bear them, and there will be reward in longer life and in greater happiness.—JULIA ALLYN.

PROSPERITY IN MASSACHUSETTS.

EDITOR AMERICAN FARMER: Farm work for another year is nearly done. Another month and all crops will be housed. This has been a good year for farmers in yield of produce and in getting fair prices for what they had to sell. The weather has been rather dry for the largest yield, but the price has offset and the producer has been the gainer.

The apple crop in New England is about an average, while the quality generally is very good, and the bright sunny weather has given them an extra good coloring. They are now selling for $2 per barrel. The celery crop is good and selling well for $1@1.25 per dozen. Squash is a short crop, worth $1.25@1.50 per barrel. Onions, $2.50@3 per barrel. Roots affected by dry weather and the market for them will be good. Beets, 75c per bushel; turnips, 50c per bushel; parsnips, 75c. per bushel; spinach, 25c. per bushel. The hay crop was good, and the crop of rowen better than the average. Have had but little frost, and the grass is now as green as in the Spring. The ground is very dry and Fall seeding is hindered, some fields of rye failing to come up for want of moisture.—W. H. BARTLETT, Woburn, Mass.

SHEEP AND WOOL IN MICHIGAN.

EDITOR AMERICAN FARMER: The Lincoln breed of sheep are having a great boom in Michigan this Fall. All the members of the Michigan Sheep-Bredeers' Association are nearly sold out.

O. D. Hichcock, of Charlotte, has imported a choice lot.

H. A. Daniells, of Elva, has bought the imported ram Duke of Hullett and seven ewes that are choice.

J. J. England has imported 25 Lincolns this month from Ontario.

A. H. Warren and H. A. Daniells expect a nice lot of imported sheep next week.

G. E. Pond, of Ovid, has bought quite a number of registered Lincolns to start a flock.

P. B. Smith, of St. Johns, has a nice flock started. He added $140 worth at the State Fair.

W. S. Allen, of Saranac, reports his all sold and could have sold his breeding ewes at $30 each.

The Michigan Lincoln Sheep-Breeders' Association has received 54 pedigrees for registry during the past four days.—H. A. DANIELLS, Secretary, Elva, Mich.

CORN HARVESTERS.

EDITOR AMERICAN FARMER: Corn harvesters of the sled type are quite extensively used by the farmers of this and adjoining States. The runners being placed about three feet apart, the "machine" is enabled to pass between two adjoining rows of corn. Attached to each side is a wing made of sheet iron or wood, to the front side of which is bolted a sharp knife. The knives do not stand at right angles with the runners, but have a backward slant which gives them a shear cut. A single, steady horse is hitched, two men stand on the sled; as it moves forward two rows are cut and caught by the men who ride. The shock is reached, the horse stops, and the large armfuls secured are set up and the operation is repeated as before.

These cutters are very simple and under favorable conditions very satisfactory. They do their best in drilled corn that stands up well. They will not "pick up" down corn, but are inclined to run over it; hence they are especially adapted to cutting listed corn. Listing is the most common and successful method of planting with us, as it is drilled one stalk in a place, always stands up, and the roots being deep down are not easily pulled out by the knives. Western shocks are made not less than 12 hills square, another point which favors the use of the cutter. Perhaps the greatest objection to these machines was their heavy draft, but this has more recently been overcome by the addition of carrying wheels.

O. P. Hood, the efficient professor of mechanics and engineering at the Kansas Agricultural College at Manhattan, told the writer that an Eastern machine used somewhat extensively for cutting ensilage corn had been tested on the college farm. It did well in small growing varieties, but when tested in 17-foot Kansas field corn it lacked the capacity to handle it properly. This was an eye-opener for the man who came along to operate the cutter, for he came to Prof. Hood's department in a great hurry for material to splice his machine.

This harvester used a drive wheel and gearing somewhat similar to that of a binder. The cutting was done by a revolving disk, and the fodder fell upon a wide elevator which deposited it on a wagon driven alongside.

The loss of fodder that is allowed to occur on Western farms is due largely to the labor and expense of harvesting by old-fashioned methods. We have successful combined power huskers and fodder crushers. As successful a harvester and binder would be worth millions to Western farmers.

Let us hear through THE AMERICAN FARMER as to the success of the corn harvester and binder mentioned on page 3, issue of Oct. 15.—GEO. T. PETTIT, Oneida, Kan.

APPLES IN NEW YORK.

EDITOR AMERICAN FARMER: The apple crop in western New York has been better than was expected. This County (Erie) did not have a full crop this year, but judging from what we hear the adjoining Counties have had more than an average yield and will make up the deficiency. During the middle of the season it was thought that there would not be enough apples to supply the home demand, but this fear was unfounded, and now there will not only be enough for us, but plenty to put on the market. We do not think that the price of apples this year will be high, but on the contrary think that they will be within the reach of all. Apple buyers have been all over the State and are quietly purchasing what they can. They will store these away during the cold weather and bring them out on the market later.—HENRY AGER, Harbour Creek, N. Y.

THE COTTON CROP.

The Present Condition and Prospects of the Southern Staple.

TEXAS.

EDITOR AMERICAN FARMER: It is hard to estimate the number of bales which the Texas crop will make this year, but it is thought that the total product will be in the vicinity of 2,000,000 bales. The crop is short; at least that is the general opinion, but the only way to verify it is to wait until everything is over. Frost has appeared, but instead of doing any harm it has helped the opening of the bolls. The railroads advanced their rates 10 points on all goods consigned to either foreign or domestic places. The change went into effect on the first of this month. I spoke above about the fact of the crop being short. It will probably be of interest to give the views of some. The majority of the planters whom I have asked think that the deficit will be about 15 per cent. as compared with the yield last year. On the other hand, quite a number are of the opinion that the shortage will be from 25 to 30 per cent. In quality the grade and staple of the present crop is far superior to that of any previous one.—HENRY STARKE, Galveston, Tex.

GEORGIA.

EDITOR AMERICAN FARMER: The weather is about the finest we could have had for the picking of cotton, and the planters are fully aware of the fact and are improving their time. The only ones who I hear objecting to the weather are those who want to sow their Winter crops. Labor is very scarce, and the planters are dependent upon the unreliable negro help. Picking is being pushed as fast as possible. It has been found that the drouth in July was a great drawback to the full development of the plants. It was the cause of the bolls shedding very freely, and it was thought at the time, with the very promising weather which followed, that this injury would do no harm. Planters are certain that the price of cotton will advance, and they are looking toward the future for great results.—PETER LUDGATE, Augusta, Ga.

ANOTHER GEORGIA REPORT.

EDITOR AMERICAN FARMER: We have had no rain for nearly six weeks, but we have had plenty of cold weather, with the temperature away below the freezing point on some days. Of course, this was very disastrous to the cotton plant, and the cotton in the lowlands and bottoms has suffered greatly. To the July drouth is attributed the lightness of the cotton, and it takes 1,600 pounds of seed cotton to make a 500-pound bale, as against 1,500 pounds last season. The crop is short, but no one knows how large the shortage is. In this section the planters are selling freely, although the prices have not been steady. Picking cotton is rapidly nearing completion, and heavy receipts are expected in a short time.—EUGENE CASSIDY, Cassidy, Ga.

MISSISSIPPI.

EDITOR AMERICAN FARMER: The cotton crop this year was very deceptive, and how much below the average the present yield will be is only a question which will soon be determined. The weeds had a very rank growth, and when the picking was made it was found that the yield in a good many places was only half a crop. The crop has been all gathered, and much dismay has been caused at the true yield. I will send the true figures as soon as obtained.—FRANK MURRAY, Greenville, Miss.

COTTON IN THE MEMPHIS DISTRICT.

The regular monthly cotton crop report for the Memphis District of October, which embraces west Tennessee, north Mississippi, north Arkansas, and north Alabama, says:

"The weather during October has in the main been favorable for picking, although some sections in Arkansas report rain during the later portion of the month, but the majority of 350 correspondents report the weather more favorable than last year. Light frosts have fallen at intervals throughout the four States since Oct. 4, but up to date of these replies no damage has been done the crop from this cause. Picking is progressing rapidly throughout the district, and up to Oct. 23 32¾ per cent. of the total yield had been gathered. A majority of our correspondents fix the date at Dec. 15 when picking will be finished. The prospective yield shows a material decrease as compared with last year, now estimated at 34½ per cent. The decrease by states is as follows: Arkansas, 36⅛ per cent.; Mississippi, 35 4-5 per cent.; Alabama, 32½ per cent.; Tennessee, 31⅓ per cent. A killing frost fell throughout the district Oct. 26, three days after these responses had been received, and no estimates of the damage from that source is included in the above report. There is no doubt that in many sections damage has been done the crop by the killing frost, which will still further reduce the estimated yield as compared with last year."

COTTON CROP ESTIMATE THIS YEAR.

Henry Neill, of New Orleans, the accepted authority on cotton, furnishes to the press his estimate of the cotton crop of 1892, which he places at 7,100,000 bales maximum, exclusive of old cotton. In the event that the Texas yield falls below 2,000,000 bales. Mr. Neill believes that the crop may not reach the 7,000,000 mark. Though there have been rumors afloat since Monday evening that Mr. Neill's estimate would be very low, its precise terms were not made public authoritatively until recently The cotton market has, however, advanced 25 points since the close on Monday owing to these rumors.

According to an estimate made by Charles B. Peck, Assistant General Manager of the San Antonio & Aransas Pass Railroad, 70 per cent. of the cotton crop in the district traversed by that system has been harvested. The recent frost, which injured the top crop in other sections of Texas, did not reach the part of the State in the vicinity of San Antonio. Advices received here from Torreon, Mex., states that the cotton crop in the famous Tlahualilo district along the Vazas River in Cohuilla and Durango, especially around San Pedro and Lerdo, will be unusually abundant this and next year. The rains there lately have been so copious that it is calculated that the coming crop will yield almost 10,000 bales more than in ordinary years.

AFTER HARVEST

When the golden grain has been shocked and put away, and you see the good results of a hard but prosperous season's work, your thoughts are most likely turned towards the purchase of a new Buggy and Harness, and you say to yourself, what make shall I buy? The answer comes to you quickly—THE CELEBRATED

MURRAY $55.95 BUGGY and $5.95 HARNESS of course. They are Better than Gold.

Their reputation for style, strength and durability being world-wide, are known the world over and are justly recognised as the BEST and CHEAPEST Vehicles and Harness on the market. They are sold direct to the consumer at prices beyond competition. No middleman nor agent gets in between them and the consumer to increase the price of their goods.

Do you wish to purchase a Buggy or Harness this year? If so, and you want value received for your money and something BETTER THAN GOLD, there is but one make to buy, and that is the celebrated "MURRAY."

MURRAY

Many Firms Make Big Claims

But We Prove our Words by Deeds

AND WILL WAGER

ONE THOUSAND DOLLARS with any Carriage or Harness firm in the U. S., same to be given to any charitable institution by the loser, that we can show more honest and better testimonials for the "MURRAY" Buggies and Harness for the time our goods have been on the market, than any one factory in the world.

Write for our large, illustrated Catalogue, containing full description and prices of our "MURRAY" VEHICLES and HARNESS. We will mail it to you FREE. Mention this paper when you write. Address all letters to

THE WILBER H. MURRAY MANUF'G CO., MURRAY BUILDING CINCINNATI, OHIO.

THE "BUSY BEE" WASHER

Guaranteed to run easier and do better work than any other in the world. No rubbing necessary. We challenge a trial with any other machine. Warranted for five years and money refunded if not entirely satisfactory. Fits any tub. Saves time, money and clothes. Just the machine for ladies who are not very strong. Thousands of ladies who used to hire their washing done, now save that expense by using the "BUSY BEE" WASHER. Save your strength, health, time, clothes and money by investing only $3 in this machine. Don't keep the Washer unless it suits you. We are responsible and mean just what we say. We invite you to investigate thoroughly before risking a cent. We will forfeit $100 to anyone who will prove that we ever refused to refund the full amount to a dissatisfied purchaser.

AGENTS WANTED in every county. Exclusive territory. Many of our Agents make $5.00 to $20.00 a month. Lady Agents are very successful. Farmers and their wives make $300 to $500 during winter. One farmer in Missouri sold 600. Price $3. Sample (full size) to those desiring an agency, only $2. Also celebrated PENN WRINGERS and other useful household articles at lowest wholesale price. We refer to our P. M. Mayor, Agt. Am. Ex. Co., or editor of this paper. Write for catalogue and terms to Agents. LAKE ERIE MFG. CO., 187 East 13th St., ERIE, PA.

This Year's Rye Crop.

Following is an estimate of the world's production of rye by Beerbohm, the quantities being expressed in quarters of eight bushels each:

	1892.	1891.	1890.
European			
Russia	75,000,000	59,800,000	76,060,000
Poland	6,000,000	4,500,000	5,500,000
Germany	31,000,000	28,900,000	27,000,000
Austria	9,500,000	8,475,000	9,809,000
Hungary	6,000,000	5,000,000	6,900,000
France	8,500,000	7,675,000	9,200,000
Spain	2,000,000	2,000,000	2,180,000
Belgium	2,500,000	1,000,000	2,100,000
Holland	1,400,000	1,000,000	1,500,000
Roumania and Bulgaria	2,000,000	1,725,000	2,000,000
Denmark	2,750,000	2,300,000	2,040,000
Sweden	2,500,000	2,750,000	2,675,000
America	3,400,000	3,750,000	3,500,000
Canada (Ont.)	250,000	250,000	195,000
Total quarters	152,300,000	129,525,000	150,560,000
Total bushels	1,216,000,000	1,034,600,000	1,204,720,000

November Crop Returns.

The crop returns of November to the Department of Agriculture indicate the yield of the year of the principle food products, and point approximately to the perfected estimates at the close of the year. The yield of corn averages by November returns 22.4 bushels per acre, and promises an aggregate production of a little more than 1,600,000,000 bushels, while the other great bread grain, wheat, by the returns of last month, pointed to a product, based on acreage investigations nearly perfected, not exceeding 500,000,000, with a possibility of shrinkage in the Spring and a certainty of light weight.

The estimated yield of potatoes is 62 bushels per acre. It is 82 in Maine, 63 in New York, 60 in Pennsylvania, 62 in Michigan, 70 in Minnesota, 51 in Iowa, and 47 in Kansas. The crop is almost everywhere light, the tubers small as a rule, and rotting considerably in New York and throughout the West.

The yield or tobacco is less than last year, the average being reported at 682 pounds per acre of all kinds, against 748 last year. The average yield of hay is 1.7 tons per acre, nearly the same as in 1891.

The yield of lint is generally short in proportion to weight of seed cotton, and the staple is short, though generally clean and of good color. The November returns indicate a very light crop with short staples, gathered generally in good condition. Local estimates range from two-fifths to four-fifths of a full crop. Many make it the worst crop since 1860. In a few favorable locations a fair crop is promised.

Never plow too close to the roots of pear trees. They run very near the surface, and may be damaged easily with a plow.

THE HOUSEWIFE'S DEPARTMENT.

We offer below a large assortment of household articles for the special benefit of our lady readers. In the preparation of this list we had in view particularly the wants of mothers during the approaching holiday season. We have therefore included a list of gifts for the children, as well as various articles for larger people. In making up the assortment we have expended a great deal of time and pains in the examination of the largest stocks of goods in the New York market. We have thus been able to secure many things not to be found at all in our country stores, and in all cases we have aimed to save our patrons at least 40 per cent. upon retail prices for the same class of goods.

Everything here offered will be found to be of the very best quality and of the largest value for the respective prices given. It will be noticed that we have given the price and postage separate in the case of everything sent by mail. In those cases where postage is not named, articles will be sent by express to the nearest express office, except where it is stated "postpaid."

In all cases where postage is given our patrons will understand that the article is mailable, and that we will send it postpaid when the specified postage is inclosed. In the case of these articles we charge nothing for the cost of packing and handling, but simply ask the average postage to reimburse us for the stamps required.

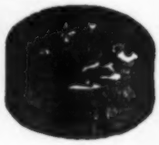
CHIMES ON WHEELS.

No. 1.

Nickel bell on wheels, to be drawn across the floor; has a very pretty jingle; three inches high, three inches wide.

Price . . . 16c
Postage 10c.

MUSIC BOXES.



Nos. 2, 3.

2. Round music box, with crank, papier mache case, fancy picture on top, one air 98c

3. Same style, much larger, two airs. $1.39

Postage 15c.

TOY JERSEY.

No. 4.

Natural leather-covered cow on platform. Size from tip of nose to tail 11 inches; six inches high; has an extra collar and a bell, also mechanical movement which gives utterance to the exact sound of a real cow. Very handsome and amusing. Price..... $1 12
Postage 30c.

RUBBER DOLLS.

Without Dress and With Whistles.

No. 5—6 inches long.
Price..... 18c

No. 6—7 inches long.
Price.....25c

No. 7—8 inches long.
Price.....33c

No. 8—9 inches long.
Price.....39c
Postage 6 to 12c., according to size.

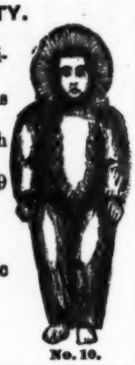
JACK IN THE BOX.

No. 9.

Wooden surprise box with heads of animals, men, etc. When box opens the head jumps out and surprises the person. Size, 4x4 inches. Colors, red, blue, or green.

Price . . 15c
Postage 6c.

SPECIALTY.



No. 10.

Very handsome Esquimaux doll, jointed arms and feet, covered with white fur, bisque head, 9 inches long.

Price.....22c

Postage 10c.

TOY PIANO.

No. 11.

Twelve keys, or 1½ octaves. Any child can learn to play on this handsome instrument. Hight 12 inches, width 14 inches. Book containing instructions given with every piano. Price 98c
Sent by express only.

HOME FISH POND.

No. 12.

Magnetic floating toys, consisting of two rowboats, two sailboats, one large and one small duck, one frog, one large and one small turtle, one large and two small fishes, and one magnet, all packed in a nice glass-covered box, size 10 x 5 inches.

Price..... 59c
Postage..... 30c

TOY HORSE.

No. 14.

Skin-covered, platform, bay horse, covered with genuine horse skin; has a mane and a tail of pure horse hair, bridle and saddle of genuine leather, and stirrups at the sides; 14 inches long, 15 inches high. A highly interesting toy. Price.....$1.49
Sent by express only.

NEW SHOPPING BAG.

No. 17.

Fancy embossed front pocket, draw strings, and sateen gussets; 12 inches wide, 10 inches high. Price..... $1.19
Postage 15c.

No. 18.

Entirely new shopping bag, fancy outside, handkerchief pocket, draw strings, sateen gussets; 12 inches wide, 10 inches high.

Price.....69c

Postage 15c.

TOILET CASE.

No. 26.

Neat silk plush, satin-lined, toilet case, containing white ivoroid comb, brush, and bevel-plate mirror. Size of case 10 inches long, four inches wide, two and a half inches high; colors, red, blue, and old gold plush. Price..... $1.19
Packing and postage 50c.

SILK DRAPE.

No. 45.

Handsome silk drapery scarf, 38½ inches long, 14 inches wide; has silk bolting end, beautifully hand painted, trimmed with silk fringe; one of the most popular scarfs manufactured. Colors, cream, white, light blue, pink, pea green, crushed rose, tea rose, orange, shrimp. Price..... 49c
Postage 5c.

LADIES' GLOVES.

No. 28. No. 29. No. 30.

No 28—Ladies' Biarritz 6-button length in tan, pearl, English reds, browns, slates, and black; good-fitting and durable. Per pair, postpaid..... 89c
Can furnish any of the above with embroidery the same color of glove or black. These are considered good value in New York for $1.

No. 29—Heavy dog skin, ladies' gantlets, suitable for driving or street wear. Per pair, postpaid... $1.39

No. 30—Eight-buttoned glace, real kid, mousquetaire; warranted in any color required. Per pair..... $1.89
Also can furnish any of the light shades with black embroidery or of the same color as glove.

No. 31.

Ladies' 4-button castor undressed gloves in slates, browns, light lemon, and tan; perfect-fitting gloves and durable for wear. Per pair, postpaid..... 89c

No. 32.

Eight-button mousquetaire, suede, real kid; warranted; lemons, tans, pearl grays, browns, and black. Per pair, postpaid..... $1.69

No. 33.

"Our Pauline" glace real kid; warranted. Can furnish 4-button tans in lemons and pearls, with narrow black embroidery, or in grays, browns, or blacks, with embridery to match the glove or in contrasting colors. Sizes 5½ to 8. Per pair, postpaid..... $1.40

No. 34.

No. 34. Ladies' fur-top mittens, patent fasteners, plush-lined.

Per pair, postpaid $1.00

No. 35.

No. 35. Ladies' rubber gloves for housework, etc.; best quality, with gantlets.

Per pair, postpaid $1.39

FINE ALL-LINEN HANDKERCHIEFS.

Nos. 46, 47, 48.

No. 46. Ladies all linen initial hemstitched handkerchiefs; any initial except I, U, V, Y, and Z.
Price per dozen $3.10
Postage 5c.

No. 47. Gent's all linen initial hemstitched handkerchiefs; any initial except I, U, V, Y, and Z. Price per dozen $3.75
Postage 12c.

No. 48. Japanese silk hemstitched handkerchiefs, with embroidered initial, cream white; any initial except I, O, U, V, Y, and Z. Price ..... 50c each.
Postage 2c.

FUR-TRIMMED REEFER.

No. 21.

Ladies' cheviot reefer, with full shawl of real cony fur and four cony bead ornaments. Black only; 32 inches long; size 32 to 44, bust measurement.
Price..... $5.50
Postage 45c.

LADIES' READY-MADE SUIT.

No. 22.

Russian blouse suit of domestic camel's hair; waist with Bishop sleeves and bodice belt; waist tastefully trimmed with Hercules braid; colors, tan, blue, gray, and black. Skirts are 42 inches long, bust measurement 32 to 44 inches. Price..... $4.75
Postage 25c.

LADIES' TAILOR-MADE SUIT.

No. 23.

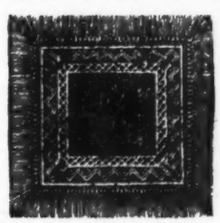
Pretty tailor-made suit of all wool, flannel or sacking-cloth waist, neatly bound with braid, and three rows on skirt; colors tan, blue, gray, and black. Skirts 42 inches long, bust measurement 32 to 44 inches. Price..... $4.75
Postage 25c.

SPECIAL! SPECIAL!!

No. 24.

Here is the biggest bargain ever offered, a girl's all-wool blue flannel sailor suit, trimmed with two rows of wide Hercules braid on skirt and collar. All sizes, 6, 8, 10, 12, 14 years. Price $2.25
Postage 11 to 20c., according to age.

STAMPED MOMIE DOILIES.



Nos. 40, 41, 42.

Square stamped linen doilies of brocaded momie cloth, one row of open work, fringes all around. Size 10x10. Price per dozen..... $1.10
No. 41. Size 12x12. Price per dozen..... 1.90
No. 42. Size 14x14. Price per dozen..... 2.10

GENTLEMEN'S GLOVES.

No. 36.

Perrin Trover's real French kid, finest quality and finish, in tans, English reds, browns, and black; warranted. Per pair, postpaid..... $2.00

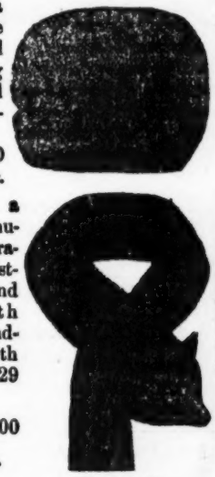
LADIES AND MISSES FURS.

No. 25.

Black French hair set, consisting of muff and boa; muff handsomely lined with heavy satin; boa three yards long. Each set in a neat box. Price..... $3.25
Postage 42c.

No. 26 is a very handsome American seal set, consisting of muff and boa, with animal's head.
Price..$11.50
Postage 22c.

No. 27 is a handsome genuine black Astrakhan set, consisting of muff and collaret, with head; muff handsomely lined with satin; collaret 29 inches long.
Price...$10.00
Postage 20c.



Nos. 26, 27.

SLUMBER CUSHION.

Nos. 43, 44.

Very neat flowered silk slumber cushion, trimmed with silk tassels, sateen lined; a very desirable thing for rocker or chair; great comfort for the head; size 11 inches wide, eight inches high. Price..... 56c
Postage 22c.

No. 44. Very handsome silk slumber cushion, various hand painted designs of flowers, sprays, etc.; trimmed with silk tassels and rings, sateen lined; size 11x8.
Price..... 89c
Postage 22c.

LADIES' WORK BOX.

No. 49. Very handsome polished wood-work cabinet, satin lined; contains scissors, bodkin, glove buttoner, and thimble; five inches long, three and a half inches wide, two and a half inches high. Price..... 39c
Postage 12c.

No. 50. Handsome silk plush work box, silk lined, with bodkin, scissors, and thimble; colors, red, blue, and old gold. Price 29c
Postage 12c

Nos. 49, 50.

OUR GREATEST BARGAIN.

No. 37.

These outfits are the best we have ever offered, and we know will prove a surprise to all who order. They consist of suits with double-breasted jacket, extra pants, and Harvard cap, made with peak and roll band. Just the thing for Winter. Material is of gray, red or brown mixed cassimere. Price of outfit is..... $2.75
Postage 35 to 60c.

ORNAMENTAL GLASSWARE.

No. 15.

This elegant and complete set of polished glass tableware, consisting of 64 pieces, as follows: 12 fruit saucers, 1 fruit or berry bowl, 2 pickle dishes, 12 water tumblers, 12 wine glasses, 12 goblets, 1 celery dish, 1 sirup jug, 1 oil bottle, 1 vinegar bottle, 1 salt shaker, 1 pepper shaker, 1 sugar sifter, 1 fruit bowl, high, 1 butter dish, 1 spoon holder, 1 cream pitcher, 1 sugar bowl, 1 large jug. The above cut shows design of set.
Price..... $5.50
Sent by express or freight.

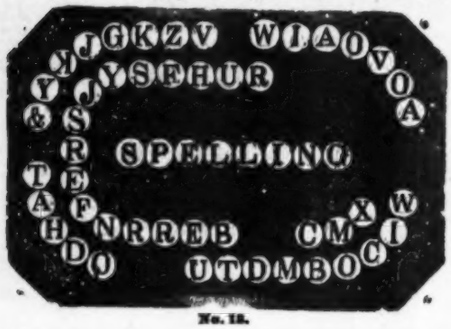
In ordering, be sure and give name of the article, as well as the number, to avoid any possible error.

Send remittances by Postoffice money order, express order or registered letter.

Postage stamps will be taken for small orders. Address

THE AMERICAN FARMER,
Washington, D. C.

UNIVERSAL SPELLING GAME.



No. 13.

The letters are so arranged that they cannot become loose. Two entire sets of alphabets; any word can be spelled thereon. This is one of the most instructive toys of the kind ever made. Letters are black on red, and the board is highly polished and decorated; size 12 x 9 inches. Price . . . 89c

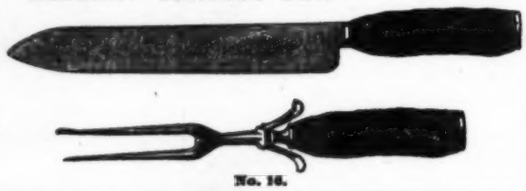
Postage 34c.

ELEGANT CARVING SET.

Three pieces, Russell steel, in neat box. Knife 8-inch blade.

Price..... $1.75

Postage 20c.



No. 16.

SPLIT LEATHER GLADSTONE VALISE.

No. 19.

Japaned frame, and two leather straps; black or brown.

Price $2.75

Sent by express only.

STAMPED MUSLIN PILLOW SHAMS.

Thirty inches square, monograms as follows: "Slumber," "Rest," "Good Night," "Good Morning," "Rest in Peace," "Sweet Dreams." Price.. 29c

Postage 5c.

No. 20.

LINEN LUNCH SET.

No. 22.

Very handsome bleached all linen lunch set, consisting of tablecloth 2x 2½ yards, and one dozen napkins 14 inches square, fringed all around, handsome flower designs, with buff, blue, or red borders, all compactly packed in a neat box. Price... $4.25

Postage 54c.

Rolled Gold and Silver Scarf Pins and Watch Charms.

No. 100. No. 101.

No. 100 is a rolled gold scarf or lace pin, a horse's head and horseshoe. Sent as a premium for a club of two subscribers. For sale, delivered 60c

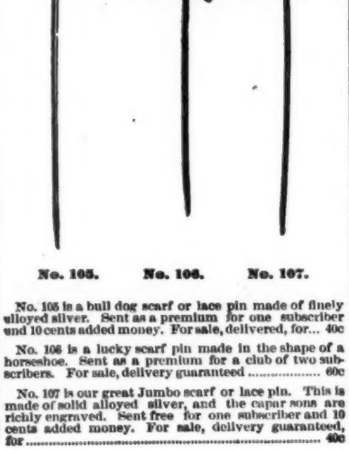
No. 101 is a solid rolled gold sword scarf or lace pin. Sent as a premium for a club of two subscribers. For sale, delivered 65c

No. 102. No. 103. No. 104.

No. 102 is a beautiful solid rolled gold scarf or lace pin in the shape of a handsome sword. Sent as a premium for a club of two subscribers. For sale, delivered... 75c

No. 103 is a sterling silver scarf or lace pin. Sent as a premium for one subscriber and 10 cents added. For sale, delivered, for 40c

No. 104 is a scarf or lace pin made of finely alloyed silver, showing the famous record breaker, Nancy Hanks. Sent as a premium for one subscriber and 10 cents added money. For sale, delivered, for..... 40c



No. 105. No. 106. No. 107.

No. 105 is a bull dog scarf or lace pin made of finely alloyed silver. Sent as a premium for one subscriber and 10 cents added money. For sale, delivered, for... 40c

No. 106 is a lucky scarf pin made in the shape of a horseshoe. Sent as a premium for a club of two subscribers. For sale, delivery guaranteed 60c

No. 107 is our great Jumbo scarf or lace pin. This is made of solid alloyed silver, and the capar sons are richly engraved. Sent free for one subscriber and 10 cents added money. For sale, delivery guaranteed, for 40c

No. 108 is a ladies' solid silver chatelaine made of sterling cut work. The swivel at the bottom holds a watch, and if detached it is useful as a breastpin. Sent as a premium for a club of five subscribers. For sale, delivered $1.80

No. 108. No. 109.

No. 109 is a charm representing the earth. It is beautifully colored and glazed. The trimmings are solid rolled-go'd plate. Sent as a premium for one subscriber and 10 cents added money. For sale, delivery guaranteed, for..... 30c

No. 110. No. 111.

No. 110 has the face of Columbus in front, and on the back a genuine stone. Sent free as a premium for one subscriber and 10 cents added money. For sale, delivery guaranteed, for 50c

No. 111 is a pair of opera glasses, size of cut, to be worn as a watch charm. They may be ordered with World's Fair views or with a landscape in one side and the Lord's Prayer in the other. Sent free as a premium for a club of two subscribers. For sale, delivery guaranteed, for..... 75c

Sent with THE AMERICAN FARMER one year for $1.60.

No. 112.

No. 112 represents a pair of patent-lever cuff buttons. These are either silver or gold plated and decorated with a jockey cap, whip, and horseshoe. Sent free for two subscribers. For sale, delivery guaranteed, for..... 65c

Sent with THE AMERICAN FARMER for $1.60.

A FAMILY DRUG STORE.

A little medicine administered at the right time will often prevent a serious illness. THE AMERICAN FARMER has had a few simple remedies prepared for its subscribers according to formulas of the best N. Y. Physicians.

HANDY BOX No. 2

Contains

100 Quinine Pills, 2 grains.
100 Quinine Pills, 3 grains.

Quinine in bulk, 65 cents per ounce. This is the best, and highest-priced quinine in the market. The price of this box by insured mail is $1.

HANDY BOX No. 3

Contains

100 Quinine Pills, 2 grains.
100 Cathartic Pills.
100 Liver Pills.
100 Anti-constipation Pills.
100 Iron Pills.
100 Anti-dyspepsia Pills.

These 600 pills, put up in a neat box with full directions for use, will be sent by insured mail to any address for $1.

SPECIAL REMEDIES.

If any subscriber wishes a special remedy it can be obtained from this paper at the following rates:

150 Anti-malarial Pills	$1
200 Tonic Pills	1
250 Skin Pills	1
250 Pepsin Tablets	1
200 Diarrhea Pills	1
150 Anti-nervous Pills	1
250 Anti-cold Tablets	1
150 Kidney Pills	1
100 Headache Pills	1

A sample packet of the foregoing nine remedies, containing 25 headache pills and 50 of each of the others, will be sent by insured mail for $1. This sample packet is our Box No. 4, and should be ordered by that number.

PLASTERS—PEPSIN—POTASH.

Plasters should be kept in the house. It does not pay to make them.

Belladonna Plasters, 7 inches by 1 yard, 75 cents.
Mustard Plasters, 6 inches by 1 yard, 45 cents.
Surgeon's Rubber Adhesive Plaster, 1 inch by 10 yards, on spool, 50 cents.
Saccharated Pepsin in half-pound packages, $1.45.
Antipyrine, 2 grain tablets, $1.55 per 100. Bromide of potassium, 5 grain tablets, 30 cents per 100. Best worm medicine for children, half a grain each of santonin and calomel, 45 cents per 100.

Address

THE AMERICAN FARMER.
Washington, D. C.

THE MARKETS.

WOOL.

BOSTON, Nov. 12.

The report of sales this week is rather higher than for some weeks past. The cheapness of fleeces and the consi erable demand for them must make them scarce long before it is possible for any of the Spring clips to be available. This fact evidently manufacturers realize, for there has been more inquiry for fleeces, more demand for them and sales aggregating nearly a million pounds. This gives to the market a stronger tone and in many instances a higher valuation. On all sides dealers regard the market with confidence. If the mills keep up the present demand they cannot see how wool can help but advance. Manufacturers who have been in a waiting mood heretofore are more generally buyers, as though they had concluded that wool will be higher before it is lower, and not alone because they are out of the wool and must have more to fill their orders.

A brisk inquiry is noted for Ohio and Pennsylvania fleeces, particularly for X. It is becoming quite apparent that the stock cannot long continue to sustain the drain that is being made upon it, and in consequence dealers are very much firmer in their views. It is impossible to buy under the market, and in many instances dealers are asking more for the stock. For XX 28c is the bottom figure, the wool costing clean 62 to 64c. No. 1 is in fair request and X in excellent demand and much stronger, costing about 60c to get up at current rates.

Michigan wools, notably X, have been very much more active. These wools also are showing the effect of the drag upon them and are beginning to be scarce. Dealers report a stiffer valuation. For X 25c is the bottom figure; very much more of the wool has been sold at 25½c than heretofore, and we note also some sales at 26c.

Combing wools are unchanged in value, but have been in good demand. The position is quite strong. Delaines have been picked up closely and are much firmer. Ohio delaine that sold some weeks ago at less than 32c, now brings 32½ for anything desirable and even higher. Michigan delaines are also in better demand. The range of quotations is 31½a32½c for Ohio and 28a30c for Michigan. In unwashed combings the coarser wools are quite active and very firm, though any change in quotations cannot be reported. We quote quarter-blood at 25a26c, and three-eighths at 26a27c. Washed combings are quoted at 35c for No. 1, and 33a34c for No. 2.

Scoured wools of all kinds have been more eargerly sought for, and some quite large sales are reported.

Texas wools are in good request, but not so active as fleeces, despite that Fall wools are arriving with more freedom. They do not attract so much attention as it seems they should, probably because the price seems high. In Texas the prices are also on a high level, and considerable of the wool is yet to be moved. We quote the market as follows: 49a52c clean for fine, and 45a 48c for medium for Fall wools. In Spring wools fine northern, 12 months' growth, 57a58c, and for eight months' growth, 53a54c. Medium of year's growth is worth all the way from 48a52c, and 47a50c for six to eight months' growth.

Oregon wools have been less freely moved, but values are unchanged. We quote prices, clean, as follows: No. 1, 53a55c; No. 2, 50a55c; valley No. 1, 50a53c; and No. 2, 46a47.

California wools show more activity. We quote the market, clean, as follows: 56a58c for northern free, twelve months, and 54a55c for eight months; 55a58c for southern 12 months, and 50a53c for six and eight months. Fall wools are quoted at 45a50c for good, and 35a40c for defective.

Pulled wools have been much more active and are reported very steady. Pullers are very firm in their views and so instruct the commission men. Mediums continue to sell very well and in some instances better prices are claimed. We quote on a secured basis: Fine A, 55a60c; A supers, 50a55c; A lambs, 48a50c; B lambs, 42a45c; C supers, 33a35c; combing, 50a53c; Western extra, 50a53c; Western super, 38a42c.

Territory wools are in good demand, but a rather less volume has been moved. Prices are unchanged in any particular, but some wools in demand are reported as having a steadier feeling. The bulk of the sales are of medium and fine medium. We quote Montana fine, 57a 58c; fine medium, 54a56c; medium, 50a53c; Wyoming and Utah fine, 55a57c; fine medium, 52a55c; medium, 49a52c.

Unwashed fleeces are in good demand and a better tone is claimed for them. Unmerchantable is also in good request. Michigan fine is quoted at 18a19c, and Ohio is at 19a21c, with medium at 23a26c. Unmerchantable is quoted at 20a22½c.

Australian wools have been sold more freely and more generally. More inquiry is noted, and holders are very confident as to the outlook. Good wools are scarce and command good prices. No change in values is noted, but holders claim that higher prices must prevail. Carpet wools are steady but quieter, awaiting the announcement of the new price list for the manufactured articles.

COTTON.

BOSTON, Nov. 15.

In yesterday's cotton market, futures opened firm and closed steady, with prices 8 to 12 points below the previous closing. Quotations were as follows:

	Opening. Nov. 14.	Closing. Nov. 14.
November	$8.64	$8.68
December	8.72	8.76
January	8.90	8.91
February	9.05	9.04
March	9.15	9.17
April	9.29	9.28
May	9.39	9.38
June	9.49	9.47
July	....	9.55
August	9.60	9.68

In New York, spot cotton closed dull at 9¼c for middling uplands, 8 11-16c for good middling, 8c for good ordinary, and 6¼c for ordinary. Sales, 1,242 bales. Stock in New York, 311,222 bales.

In Liverpool, spot cotton is easier with a moderate demand. The quotations are unchanged at 4 13-16d for middling uplands. Liverpool futures closed barely steady at 4 47-64d for November delivery; November and December, 4 47-44d; December and January, 4 47-64d; January and February, 4 49-64d; February and March, 4 51-64d; March and April, 4 53-64d; April and May, 4 55-64d; May and June, 4 58-64d; June and July, 4 61-64d. The sales in Liverpool were 8,000 bales; American, 5,600 bales. Receipts, 20,300 bales; American, 20,300 bales.

GALVESTON, Nov. 12.

Cotton firm; middling, 8c; low middling, 7¼c; good ordinary, 7¼c.

NEW ORLEANS, Nov. 12.

Cotton firm; middling, 7 15-16c; low middling, 7¼c; good ordinary, 7c.

SAVANNAH, Nov. 12.

Cotton firm; middling, 7 13-16c; low middling, 7 9-16c; good ordinary, 7 1-16c.

GRAIN AND BREADSTUFFS.

CHICAGO, Nov. 12.

Quotations are:

	Open.	High.	Low.
Wheat—November	72½	73½	72½
December	73½	74½	73½
May	79½	80	79½
Corn—November	42½	42½	41½
December	42½	42½	42
May	48¼	48¼	47½
Oats—November	31½	32½	31½
December	32½	32½	32½
May	37½	37½	36¼

NEW YORK, Nov. 14.

Barley was steady, fair Western at 73c. Rye was dull and nominal at 55a60c. Official quotations:

WHEAT.

	Opening.	Lowest.	Highest.	Closing.
December	77½	77 1-16	77½	77½
January	78½	78½	78½	78½
March	82 5-16	81½	82 5-16	81½
May	84½	84½	84 7-16	84½
June	84½	84½	85	84½

CORN.

December	50½	50½	51	51
January	51½	51½	51½	51½
May	53½	53	53½	53½

OATS.

November	36	36	36	36
December	36½	36½	36½	36½
January	..	37½	38	37½
May	41½	41	41½	41½

LIVERPOOL, Nov. 15.

Wheat is quiet and demand poor; holders offer moderately; California No. 1 white 6s, 8d a6s, 8½d. per cental. Corn is quiet and demand poor; mixed Western, 4s. 2½d. per cental.

LIVE STOCK.

CHICAGO, Nov. 12.

Cattle—Receipts were light and the market without material change. Prices were nominally steady, with choice cattle wanted at strong prices. Quotations are as follows:

Choice to extra steers, 1,500a1,750 pounds	$5 30a 5 85
Good to choice steers, 1,300a1,500 pounds	4 90a 5 25
Fair to good steers, 1,050a1,300 pounds	3 70a 4 40
Poor to medium steers, 900a1,110 pounds	3 00a 3 60
Good to fancy cows and heifers	2 40a 3 15
Inferior to good cows and heifers	1 40a 2 35
Stock steers, 630a850 pounds	2 00a 2 70
Feeding steers, 900a1,200 pounds	2 50a 3 40
Veal calves, 100a400 pounds	2 00a 5 50
Texas steers, 750a1,150 pounds	2 25a 3 35
Western range steers	2 80a 4 65

Hogs—Arrivals were again somewhat below expectations and prices advanced about 10c. The market closed strong. Best heavy sold at $6, or about 45c higher than the low time last week, 75c higher than the low time last September, and the highest price paid here since the middle of last August. Most of the offerings sold yesterday at $5.75a5.90 for all weights. Comparatively few hogs sold below $5.60, while rough heavy sold in small lots as low as $5.35a 5.45. Best light sold up to $5.85, and best mixed at $5.90. Pigs sold at $4.40a5.55.

Sheep—A light run and a fair demand caused a stronger feeling in the trade, but there was no quotable change in values. Sales included six head of double extra fancy Shropshires, averaging 183 pounds, at $6, but most of the natives sold at $3.50a4.25. Some 89-pound Wyoming sheep sold at $4.12½; 808 Wyomings, 109 pounds, $4.20; fed Western, 116a118 pounds, $4.45a4.50; 1,000 Mexican feeders, 66a70 pounds, $3.60a3.70; 406 Texas ewes, 76 pounds, $3.25. Lambs, $3.75a 5.35.

BUFFALO, N. Y., Nov. 14.

Cattle—Market closed steady; bulk sold; extra steers, $4.90a5; choice do, $4.50a4.80; good fairly fat shipping do, $4.35a4.45; medium butchers and shippers do, $3.90a4.35; light handy butchers do, $3.50a3.90; light half fat do, $3.15a 3.50; coarse do, $2 50a3.25; oxen, common to best, $1.25a3.50; cows and heifers, good to extra, $2.75 a3.25; do, do, common, $2a2.50; poor to good mixed butchers, $2a2.75; cows, common to fair, $1.50a2; do, good to extra corn fed, $2.50a3.15; bulls, stock, $1.60a2; fat butchers, $2.40a2.65; export, $2.75a3.15; bologna, $2a2.25; milch cows, good to choice, $40a50; extra, $55; common, $25a 38; old cows, $15a25.

Hogs—Market closed weak; heavy grades, corn fed, $5.90a6; packers and medium, $5.75a5.85; Yorkers, good to best, corn fed, $5.70a5.80; do, light to fair do, $5.65a5.70; good heavy ends $5.25 a5.40; pigs, good to best corn fed, $5.50a5.65; do, common skips to fair $5.50; assorted roughs, $5.25a5.50; common roughs, $4.75a5; stags, $3.75a 4.50.

Sheep and Lambs—Market closed very dull with good many unsold; choice to fancy wethers, $4.25a4.40; fair to good sheep, $3.90a4.15; culls and common do, $2.75a3.75; Canada do, $4.25a 4.75.

Lambs—Native, choice to fancy, $5.25a5.65; do, fair to good, $4.90a5.15; culls to fair, $3.75a4.75; Canada, common to good, $5.10a5.15; do, choice to fancy, $5.20a5.35.

FRUITS AND VEGETABLES.

NEW YORK, Nov. 12.

Choice apples are firmly held. Other qualities are rather quiet. There is a good demand for prime cranberries, and a few fancy lots sold for a little above quotations. Grapes are not very active. Prime oranges are wanted, but inferior grades are neglected. There is a healthy trade in quinces. Grape fruit is firm. We quote:

Apples, Northern Spy, prime, per barrel	$1 75 a 2 25
Apples, Northern Spy, inferior to good, per barrel	1 25 a 1 50
Apples, Spitz, choice, per barrel	2 50 a 3 00
Apples, Spitz, poor to fair, per barrel	1 50 a 2 00
Apples, Snow, per barrel	2 50 a 3 00
Apples, King, per double-head barrel	2 50 a 3 50
Apples, Baldwin, prime, per double-head barrel	1 75 a 2 75
Apples, Baldwin, per small barrel	1 50 a 1 25
Apples, Greening, per double-head barrel	2 75 a 3 00
Apples, Greening, per small barrel	2 25 a 2 75
Apples, ordinary, per barrel	75 a 1 25
Cranberries, Belle, fancy, per barrel	7 00 a ....
Cranberries, early black, per barrel	6 50 a ....
Cranberries, Cape Cod, fair to good, per barrel	4 50 a 5 50
Cranberries, Cape Cod, poor, per barrel	2 75 a 4 00
Cranberries, Cape Cod, fancy, per crate	2 00 a 2 12
Cranberries, Cape Cod, medium to prime per crate	1 50 a 1 80
Cranberries, New Jersey, per crate	1 25 a 1 75
Grapes, wine, western New York, Niagara, in trays, per pound	1½a 2
Grapes, western New York, Niagara, per 5-pound basket	12 a 20
Grapes, western New York, Catawba, per 5-pound basket	12 a 15
Grapes, western New York, Catawba, per 10-pound basket	18 a 20
Grapes, western New York, Delaware, per 5-pound basket	13 a 22
Grapes, western New York, Concord, per 5-pound basket	9 a 12½
Grapes, western New York, Concord, per 10-pound basket	16 a 20
Grapes, up-river, Concord, in trays, per pound	1½a 2
Pears, Beurre d'Anjou, per parrel	3 50 a 6 00
Pears, Duchess, per barrel	3 00 a 6 00
Pears, Keiffer, per barrel	3 00 a 5 00
Pears, Seckel, per keg	2 00 a 4 00
Pears, ice house, per box	2 50 a 4 00
Pears, cooking, per barrel	2 50 a 3 00
Quinces, apple, prime to fancy, per barrel	4 00 a 5 00
Quinces, apple, medium to good, per barrel	3 00 a 3 50
Quinces, inferior, per barrel	1 75 a 2 00
Oranges, Florida, prime, per box	2 50 a 3 00
Oranges, Florida, poor to fair, per box	1 25 a 2 25
Grape fruit, Florida, per box	2 50 a 4 25
Grape fruit, Florida, per barrel	4 00 a 6 00

The market for potatoes is rather quiet. Sweet potatoes are scarce, and prices have advanced. Cabbage continues firm. Onions are slow. Eggplant is irregular in quality and price. Cauliflower is steady. Celery is quiet. Prime string beans and green peas are firm. Turnips are in fair demand. We quote:

Potatoes, Long Island, per barrel	2 00 a 2 25
Potatoes, New Jersey, prime, per barrel	1 75 a 2 00
Potatoes, New Jersey, inferior, per barrel	1 25 a 1 62
Potatoes, up-river, per barrel	1 75 a 2 00
Potatoes, State, per barrel	1 75 a 2 00
Potatoes, Irish magnum, per 168-pound sack	2 25 a .. ..
Sweet potatoes, Virginia, yellow, prime, per barrel	2 50 a 2 75
Sweet potatoes, New Jersey, choice, per barrel	3 00 a 3 25
Sweet potatoes, New Jersey, fair to good, per barrel	2 50 a 2 75
Sweet potatoes, Vineland, choice, per barrel	3 25 a 3 75
Onions, Connecticut, yellow, per barrel	2 25 a 2 75
Onions, Connecticut, white, per barrel	2 50 a 3 50
Onions, Connecticut, red, per barrel	2 25 a 2 50
Onions, Orange County, red, per barrel	1 50 a 2 25
Onions, Orange County, yellow, per barrel	1 75 a 2 25
Onions, State, yellow, per barrel	2 00 a 2 37
Onions, Western, yellow, per barrel	2 00 a 2 37
Cabbage, flat Dutch, per 100	4 00 a 6 00
Squash, marrow, per barrel	1 25 a ....
Squash, Hubbard, per barrel	1 50 a ....
Eggplant, per barrel	2 50 a 5 00
Cauliflower, choice, per barrel	1 12 a 1 25
Cauliflower, poor to good, per barrel	75 a 1 00
Celery, Michigan, per dozen roots	35 a 50
Celery, State, per dozen bunches	10 a 25
Turnips, Russia, per barrel	70 a 80
String beans, Savannah, per basket	50 a 75
String beans, North Carolina, per basket	1 00 a 1 50
String beans, Charleston, per basket	75 a 1 25
String beans, Norfolk, per basket	1 25 a 1 75
Green peas, Norfolk, per basket	1 00 a 2 50
Lima beans, New Jersey, per bag	1 25 a 1 50

HAY AND STRAW.

There is a fair demand for prime hay. The market for other grades is rather quiet. We quote:

Hay, No. 1, per 100 pounds	..80
Hay, No. 2, per 100 pounds	75a 80
Hay, No. 3, per 100 pounds	65a70
Hay, clover, mixed, per 100 pounds	60a70
Hay, shipping, per 100 pounds	60a65
Hay, salt, per 100 pounds	..a50
Long rye straw, per 100 pounds	55a60
Short rye straw, per 100 pounds	40a45
Oat straw, per 100 pounds	40a50
Wheat straw, per 100 pounds	..a40

BUTTER AND CHEESE.

Butter—The market for butter was quiet today, although receivers maintained prices on fancy grades with confidence. June packed is dull. We quote:

State dairy, half-firkin tubs, fancy, per pound	26½a27
State dairy, half-firkin tubs, good to choice, per pound	25 a26
State dairy, half-firkin tubs, fair to good, per pound	22 a24
Eastern creamery, fancy, per pound	29 a29½
Eastern creamery, choice, per pound	27 a28
Eastern creamery, fair to good, per pound	24 a26
Dairies entire, Eastern, choice, per pound	23 a24
Dairies entire, Eastern, fair to good, per pound	21 a22
Elgin creamery, fancy, per pound	.. a29
Pennsylvania creamery, fancy, per pound	.. a29½
Western creamery, fancy, per pound	29 a29½
Western creamery, choice, per pound	27 a28
Western creamery, fair to good, per pound	23 a26
Western dairy, choice, per pound	21 a22
Western dairy, fair to good, per pound	16 a18
June packed, per pound	16 a17

Cheese—The market for cheese was rather quiet to-day. Holders, however, are very confident, and maintained prices. The quotations to-day from Liverpool as reported by cable are 52s54s. We quote:

State factory, September make, fancy, white, per pound	10½a..
State factory, September make, fancy, colored, per pound	10½a10¾
State factory, new, full cream, choice, per pound	10½a10¾
State factory, good to prime, per pound	9½a10
State factory, ordinary to fair, per pound	7½a 9½

HONEY AND BEESWAX.

Beeswax, Western, pure, per pound	25a28
Beeswax, Southern, pure, per pound	26a..
Honey, new, white clover, 1-pound boxes, per pound	13a15
Honey, new, white clover, 2-pound boxes, per pound	12a14
Honey, buckwheat, 1-pound boxes, per pound	10a12
Honey, buckwheat, 2-pound boxes, per pound	10a11

LIVE POULTRY.

Geese, Western, per pair	$1 25 a1 50
Geese, Southern, per pair	1 25 a....
Ducks, New York, New Jersey, and Pennsylvania, per pair	70 a 90
Ducks, Western, per pair	60 a 70
Ducks, Southern, per pair	50 a 60
Chickens, near-by, per pound	9 a ..
Chickens, Western, per pound	.. a 9
Fowls, State, Pennsylvania, and Jersey, per pound	9 a ..
Fowls, Western, per pound	.. a 9
Turkeys, mixed, per pound	10 a 11
Roosters, mixed, per pound	5 a ..

DRESSED POULTRY.

Chickens, Philadelphia, mixed weights, per pound	13 a 15
Chickens, Western, dry picked, choice, per pair, per pound	10 a 11
Chickens, Western, dry-picked, per pound	10 a 12
Chickens, Western, scalded, choice, per pound	10 a 11
Fowls, Western, choice, dry-picked, per pound	10 a 10½
Fowls, Western, dry-packed, per pound	10 a 11
Fowls, Western, scalded, prime, per pound	.. a 10
Old roosters, per pound	7 a 7½
Turkeys, dry-picked, young, choice, per pound	12 a 13
Turkeys, dry-picked, young, medium to good, per pound	10½a 11½
Turkeys, State and Pennsylvania, dry-packed, per pound	13 a 14
Turkeys, young, scalded, good to prime, per pound	10 a 12
Turkeys, mixed weights, per pound	13 a 15
Ducks, young, Eastern, per pound	16 a 17
Ducks, young, Long Island, per pound	17 a ..
Ducks, young, New Jersey, per pound	16 a 17
Ducks, young, New Jersey, dry-packed, choice, per pound	15 a 16
Ducks, young, up-river, per pound	16 a 17
Ducks, young, Western, poor to good, per pound	8 a 10
Ducks, young, Western, choice, per pound	11 a 13
Ducks, young, Westeren, dry-packed, per pound	13 a 15
Ducks, old, per pound	8 a 12
Geese, young, Eastern, per pound	15 a 16

EGGS.

The market for eggs was barely steady to-day Limed eggs are quiet. We quote:

Eastern, choice, per dozen	25 a 26
Western, choice, per dozen	25 a 25
Western, fair to good, per dozen	21 a 23
Icehouse, per dozen	20 a 21
Limed eggs, Eastern, per dozen	18½a 19
Limed eggs, Western, per dozen	18½a 19
Limed eggs, Canada, per dozen	18½a 19

Profitable Planting.

Oi've planted praties be the mofle
In Oirish and in Yankee soil,
And worked wid hope the earnin'
W'u'd be for ivery man a shcore,
But naither sayson was there more
Than two-fold crop returnin'.

But whin, on certain coortin' thrips,
Oi'd plant a kiss on Judy's lips
(Afeard at first Oi'd blundther'd),
Bedad, so rich the plantin' ground,
Be shwate axpayrience I found
Aitch kiss'd bring a hun'therd.

He Found It.

Greyneck—You remember that very handsome watch I lost five or six years ago?

Smilax—Yes, I recall the occurrence.

Greyneck—You remember how I looked high and low for it, and could not find it anywhere?

Smilax—I remember your diligent and exhaustive search.

Greyneck—Well, yesterday I put on an old waistcoat that I hadn't worn for years, and what do you think I found in the pocket?

Smilax—Your watch; let me congratulate you.

Greyneck—No; I found the hole that I must have lost it through.

As It Seemed to Him.

(After the annual club dinner.)

"'S all right, M'riash—'s all right. No 'cusion f'lumination, though. Rest'r boysh too drunk t'come!"

It Happened to Come to Her.

Young Wife (at midnight)—Wake up, wake up.

Husband—What is it, dear? Robbers?

Young Wife—Mercy, no! You asked me at supper what ailed the cake. It just happened to come to me this minute. I forgot to put any sugar in it.

Sponge Cake.

Mistress—Do you call this sponge cake? Why, it's as hard as can be.

New Cook—Yes, mum; that's the way a sponge is before it's wet. Soak it in your tea, mum.

A Very Passive Verb.

Mr. Henpeck—How are you coming on in grammar at school?

Johnny—I am writing out my exercises about the active and passive verbs. "I have married," is active.

Mr. Henpeck (glancing at his vicious wife)—No, Johnny, it is passive.

Not His Fault.

Parent (trembling with emotion)—You are audacious—you are heartless! She is my only child!

Suitor (wishing to pacify)—But, my dear sir, you—er—you can't blame me for that.

A Misunderstanding.

Mistress—You are stupid. I told you to pay attention when the milk boiled over.

Servant—And I did, mum. It was a quarter past eight, mum, by the clock when it boiled over.

A Great Moral Show.

Boy—Pop, kin I go to th' circus?

Pop—Circuses is wicked.

Boy—The man gave me two tickets fer carryin' water fer the horses.

Pop—Um! A man wot's as charitable as that can't be very bad. We'll both go.

Origin of Hay Fever.

Mrs. Hayseed—The *Weekly Gleaner* says a doctor says the golden-rod causes hay fever.

Mr. Hayseed (thoughtfully)—It may be. Only city folks get hay fever, and the angels knows no one but city folks is fools enough to be snuffin' around them yeller weeds.

Cremation Gaining Ground.

"Pa, some of these people who are buried here haven't gone to heaven."

"Hush, Tommy; how do you know they haven't?"

"Because I read it on the tombstones?"

"Read what on the tombstones?"

"On ever so many of them I read, 'Peace to his ashes.' There aint no ashes except where it is very hot, is there?"

A Query Raised.

His Young Wife—George, dear, I do wish you would get your life insured. Where would I go if you were to die?

George—And, great heavens, where would I go?

Poor Prospects.

Master of House (to a prowler)—What do you want prowling about these premises?

Prowler—O, nuthin' in perticular, only I was going to propose for the hand of your daughter.

"Haven't got any daughter."

"Well, this is the poorest layout I've struck."

Hotel Life.

Jackson—What time do you wake up in the morning usually?

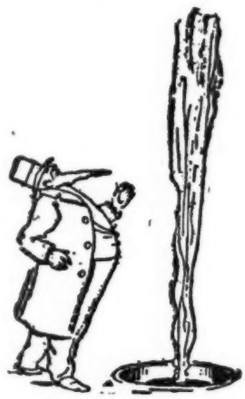
Jimson—Four o'clock.

"Great Snakes! Why so early?"

"I board at a hotel, and that's the hour the man in the next room goes to bed.

That Deadly Manhole.

"The election of our ticket, sir, is bound to give business——



"A great boom.

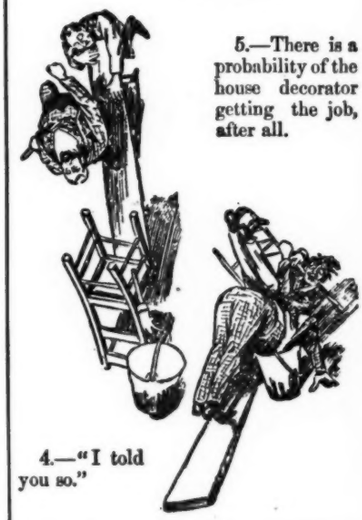
"As I was saying when you left me just now, the election," etc.

A Little Job of Kalsomining.

1.—"Look here, Bob. The landlord can be hanged. I'll do this myself."

2.—"There's not any kind of difficulty about it, you see."

3.—"Great Scott, hold up, the chairs are going.



5.—There is a probability of the house decorator getting the job, after all.

4.—"I told you so."

—*Frank Leslie's Popular Monthly.*

Better than Law.

Mr. Suburb—My neighbor has a big dog that we are all afraid of. What do you advise?

Lawyer—Get a bigger one. Five dollars, please.

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The improvements of this machine over others are: First, that it instantly adjust itself to any size ear, removes all the kernels from the cob, at the same time throwing the cobs on the floor away from the corn. Second, from the peculiar construction of the teeth on the disc some draw the ears into place without assistance from the operator, while others are arranged to strip the kernels from the cob at the same revolution. Third, because of its simplicity it is always in working order.

This is without doubt the cheapest, as it is the best, machine of the kind on the market.

Any farmer or poultry raiser who has corn to shell will save the cost of this heller in a few days.

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" 19.50	"	13.00
" 24.00	"	18.00
" 25.00 Imperial	"	18.50
" 82.75	"	52.00
" 77.00 Phaeton	"	60.00
		75.50

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On the right in the foreground is a group of awe-stricken natives, one of whom fall's in adoration at the feet of the strangers. In the distance upon the ocean is shown the historic fleet which brought our adventurers to the New World. Every figure is instinct with life, while the features of each are reproduced with lifelike vivacity.

The original of this picture has been the many years the great attraction in the rotunda of the Capitol at Washington.

It is one fortunate that this costly painting has been carefully preserved by the U. S. Government, as the time has arrived when the achievements of the great navigator, who started the Columbian era of the unknown west, are dear to those who dwell in the land.

There are very few Columbian relics remaining, and in the World's Columbian Exposition, which is about to be opened, the great portrayed in the painting is to be presented on new shores.

The Spanish and United States Governments propose to build a new Santa Maria, Nina, and Pinta and sail into the harbor of New York and thence to Chicago by the way of the canals and Great Lakes. They will be dressed out in every particular like their great prototypes 400 years ago, and will have on board Spaniards in the costumes exactly copied from those seen in this wonderful picture.

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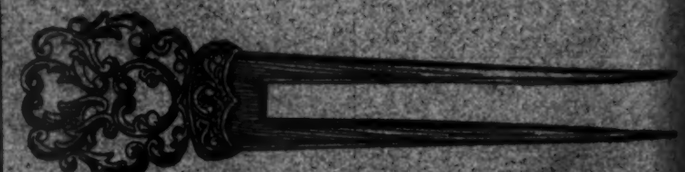

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